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ALASKA
REVIEW OF SOCIAL AND ECONOMIC CONDITIONS

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Changing Ownership and Management of Alaska Lands

INTRODUCTION

In 1958, most of the nation's unreserved federal lands were in Alaska: nearly 300 million acres whose fate had yet to be decided. Those public domain lands covered an area larger than the states of Texas and California combined—an area where you could put several European countries and still have room for Japan.

Today there are about 80 million acres of public domain—federal lands not reserved for any special purpose—left in Alaska. Ultimately, that figure will be reduced to 45 million. Most of the formerly unreserved lands now either belong to the state government and the Native corporations or are part of the national conservation systems—chiefly national wildlife refuges, parks, and forests. Between 1958 and 1980, Alaska changed from a territory with 60 percent of America's public domain to a state with 75 percent of the country's national parks and 90 percent of its wildlife refuges.

The dividing up of the public domain took place slowly and painfully during the first 20 years after Alaska became a state. Many interest groups and individuals saw great opportunities in these huge acreages, which made up the largest undeveloped areas left in the United States. The lands were known to have rich deposits of some resources and were suspected to contain others. They also included vast expanses of scenic wilderness and habitats of many kinds of wildlife.

The chief claimants on the public domain were the new state government, which needed lands as an economic base; Alaska Natives, who had aboriginal claims to land; industrial groups, which wanted Alaska lands left open for exploration and development; and environmental organizations, which wanted big areas added to the national conservation systems.

Congress divided up Alaska's public domain in three laws passed between 1958 and 1980: the 1958 Alaska Statehood Act, which granted the new state government 104 million acres; the 1971 Alaska Native Claims Settlement Act, which awarded Alaska Natives 44 million acres; and the 1980 Alaska National Interest Lands Conservation Act, which added 104 million acres to national parks, wildlife refuges, and other parts of the conservation systems in Alaska.

Although the statehood act and the claims settlement act were both passed long before the Alaska lands act, land transfers to the state government and the Native corporations were slow until after 1980. This slow transfer of lands had several causes, but a chief one—especially for state lands—was that the Department of the Interior withheld much of the public domain from state and Native selection while Congress debated which lands to add to the national conservation systems.

There was technically enough public domain in Alaska to cover state and Native land grants and to add to the conservation systems, but not all lands were equally desirable: resources are not spread evenly around the state.

The best lands for settlement and development are generally at elevations below 1,000 feet. Nearly one-third of Alaska lands are above 2,000 feet, and almost 10 percent are covered with glaciers. Large

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Donald O'Dowd—President, University of Alaska
David L. Outcalt—Chancellor, University of Alaska, Anchorage
Thomas A. Morehouse—Acting Director, Institute of Social and Economic Research

Institute Editor: Ronald Crowe
Editorial Assistant: Kandy Lee
907-278-4621

Main Institute Office:
707 "A" St., Suite 206
Anchorage, Alaska 99501

FEATURE

Linda Leask Changing Ownership and Management of Alaska Lands

Linda Leask is a research associate with the Institute of Social and Economic Research in Anchorage.

areas along the coast are marshland. Known or suspected petroleum fields are mostly on the North Slope, with a few favorable areas elsewhere in the state. Half of Alaska is treeless, and most commercial-grade timber is concentrated along the southeastern and southcentral coasts. There are many mineralized areas in Alaska, but for a number of reasons—including the state's cold climate and geographic isolation—mineral deposits must be extremely large or valuable to make their development profitable. About a dozen deposits that might eventually be profitable to develop are known in Alaska today.

Those areas with resources that are or might be marketable often are the same ones that have important animal habitats or beautiful scenery.

The state government primarily wanted lands with potential for petroleum or other resource development; by acquiring such lands, the state hoped to secure its economic future. Native corporations, which were established to handle money and lands awarded Alaska Natives, also wanted lands that could be developed for the economic benefit of Alaska Natives, as well as some of the lands where Native peoples had historically lived and hunted and fished.

Environmental organizations wanted wilderness areas of Alaska to stay wilderness—which meant putting them in the protected national conservation systems. It also meant designating large areas of national parks, refuges, and forests as "wilderness"—a classification that prohibits virtually all uses that change the face of the land. Miners, other industrial groups, and the State of Alaska wanted Alaska lands left open for future exploration and development.

And so over 20 years, there were many battles over who would get which lands. At base the bitterest fights came down to this: were certain Alaska lands most valuable for their beauty and wildlife habitats, or for their minerals and other resources?

Through the three big land acts, all the parties got some of what they wanted; none were entirely satisfied. The state government in 1985 has 75 percent of its lands and has selected some of the rest. The Native corporations likewise have about three-quarters of their lands and have essentially chosen the rest.

The state has some resource lands—the most valuable to date being those over the giant Prudhoe Bay oil field. The Native corporations have some lands with potential for timber, coal, and other resource development. They also have lands around Native villages, including some within areas added to the national conservation systems in 1980.

Environmentalists saw enormous additions to the conservation systems—additions that doubled the size of the national park system and tripled the wildlife refuge system in the United States. About a

dozen of the largest known mineral deposits were excluded from the new conservation additions, but other mineralized areas were not.

In the following pages of this *Review*, we look broadly at changing ownership and use of Alaska lands today. We first describe the backgrounds of the three federal laws that largely determined ownership of the former public domain in Alaska. Next, we look at how far land transfers called for under those laws have progressed—at how much of their lands the state government and the Native corporations have in 1985. We also talk about who owns the rest of the lands in the state. We then look at allowable uses of public lands in Alaska.

The second half of the *Review* discusses issues of land ownership and management that are yet to be resolved. These include, among others, the authority of the Interior Department to exchange lands in national conservation units; access to mineral deposits in or near conservation lands; the need for surveys of many large and thousands of small parcels of land; reconveyances of land by Native corporations to municipalities and individuals; and a number of disputes about submerged lands onshore and offshore. Finally, we draw some conclusions about changing land status in Alaska.

CHANGING LAND OWNERSHIP RESULTING FROM FEDERAL LAWS

Before Statehood

In 1958, about 80 percent of Alaska's 375 million acres were open public domain, 10 percent were in the national conservation systems, and most of the remaining 10 percent were in other kinds of federal reserves. The first graph in Figure 1 shows this land status just before Alaska became a state.

The United States bought Alaska from Russia in 1867. From then until Alaska became a state in 1959,

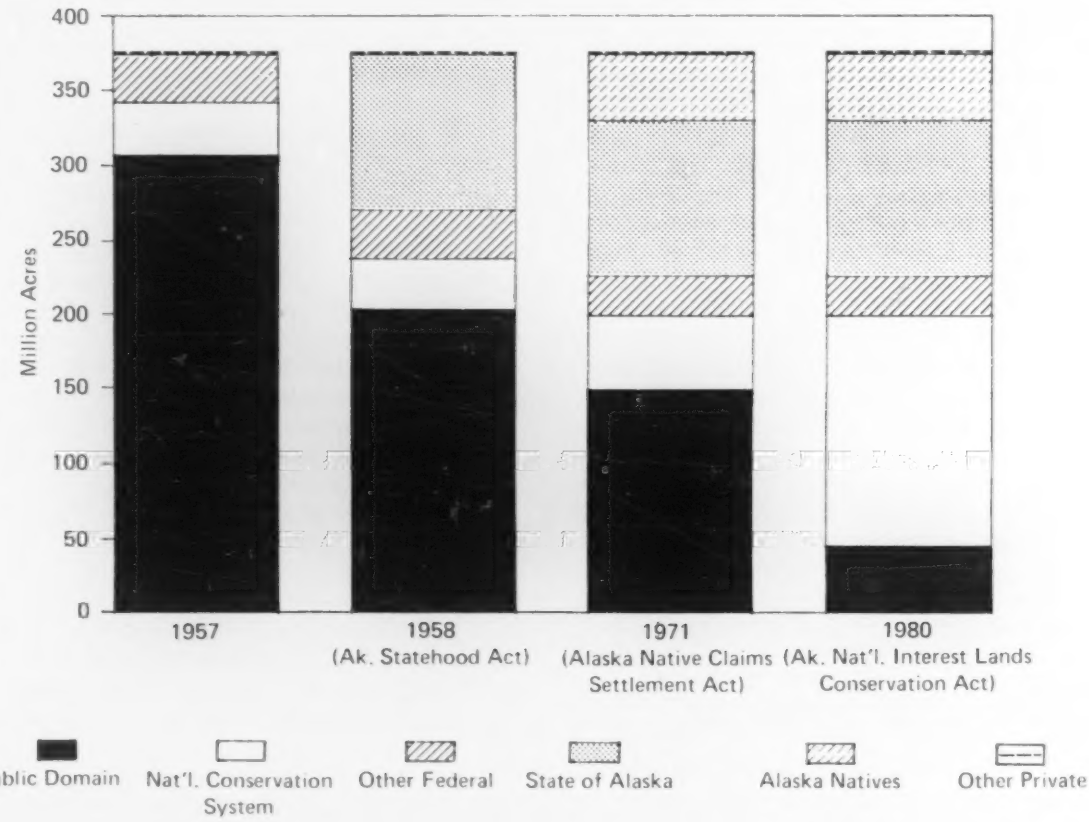


Figure 1. Alaska Land Status Resulting from Federal Legislation

very little land in the vast territory went out of federal ownership, and most remained unreserved public domain—federal land not withdrawn for any particular purpose and open to homesteading, mining, and other uses under the public land laws.

Perhaps half a million acres were privately owned in Alaska in 1958. The federal government had, up to that time, designated about 35 million acres in Alaska for inclusion in the national conservation system—mostly for national forests along the southeast and southcentral coasts. Another roughly 30 million acres were in other kinds of federal reserves, the largest being the 23-million-acre national petroleum reserve on the North Slope. That left more than 300 million acres in open public domain and in temporary federal reserves that later reverted to public domain. [1]

Alaska Statehood Act

Lands granted the state government under the Alaska Statehood Act shifted land ownership as shown in graph 2 of Figure 1: federal public domain, 53 percent; state government, 27 percent; national conservation systems, 10 percent; other federal reserves, nearly 10 percent; private lands, less than 1 percent.

The first big reduction in the public domain came in 1958, when Congress passed the Alaska Statehood Act. That act gave the new state government rights to select 104 million acres from unreserved federal lands in Alaska. This large land grant was intended to give the State of Alaska an economic base. Other federal laws brought the state's entitlement to more than 105 million acres. The act also gave the state government ownership of the beds of most navigable rivers and lakes in Alaska. This ownership of submerged lands is also important, but as we discuss later, in 1985 the state and the federal government have not yet agreed on which of Alaska's thousands of water bodies are navigable. Finally, the statehood act awarded the state government ownership of submerged lands up to 3 miles off its coasts. These lands are a very valuable asset, with the best prospects for future petroleum discoveries judged to be in these territorial waters or farther out on the federal Outer Continental Shelf. But the federal and state governments also disagree about where the 3-mile boundary lies; we talk about that controversy later in the *Review*.

The state began its land selections in the 1960s, but those selections had not progressed far when the Department of the Interior stopped all land transfers to the state, and almost all other federal land transfers in Alaska, pending settlement of the land claims of Alaska Natives.

Land Freeze

In the late 1960s, unresolved Native land claims covered the state. The Interior Department stopped almost all federal land transfers—including transfers to the state government—and development of the giant Prudhoe Bay field was blocked.

The federal government had long recognized that Alaska's Native peoples had legitimate claims to land, but it had never said what land that might be. And Alaska Natives themselves, although they had always maintained their rights to land, did not really organize and press those claims until the state government began choosing its lands. [2] At that point, the Natives saw that they stood to lose their chance for any lands they claimed that the state also wanted.

By the end of the 1960s, various Native groups had claimed all the land in Alaska, and the Interior Department had stopped virtually all transfers of federal land under what came to be known as the "land freeze." At just about the same time, a group of oil companies discovered the Prudhoe Bay oil field on the North Slope. Tests showed that this field had 9 billion barrels of recoverable oil—making it the largest ever found in North America. It lay under lands the federal government had already approved for state ownership.

The oil companies proposed to build a pipeline across Alaska to carry the oil to a port on the southern coast. Much of the land the pipeline would cross was under claim by Alaska Natives.

The state government had two strong reasons for wanting Native claims settled—to end the freeze on land transfers and to clear the way for the pipeline to be built. Development of the Prudhoe Bay field promised to bring the state substantial income since it owned the lands at Prudhoe Bay. The oil companies were also eager to see Native claims settled.

Alaska Native Claims Settlement Act

The 44 million acres awarded Alaska Natives in settlement of their land claims changed the picture of land ownership in Alaska as shown in graph 3 of Figure 1: state government, 27 percent; federal public

[1] These temporary federal withdrawals were mostly for proposed large power projects that were not built.

[2] The exceptions to this generalization were the Tlingit-Haida Indians of southeast Alaska, who had a 30-year court case over their claims to land in the Tongass National Forest. The Court of Claims decided in 1959 that the Tlingit-Haida people should be compensated for lands appropriated by the federal government. Ultimately they were awarded $7.5 million.

domain, 40 percent; national conservation systems, 13 percent; Alaska Natives, almost 12 percent; other private land, less than 1 percent.

Support from various interests that stood to gain by resolution of Native claims helped produce the 1971 Alaska Native Claims Settlement Act, which awarded Alaska Natives $1 billion and 40 million acres. Native lands were to come largely from designated areas of federal land, mostly around villages. Villages on existing reserves were also given the choice of taking title to those lands; several did so, and that brought Native entitlements under the settlement to about 44 million acres.

Twelve regional and more than 200 village corporations were established to manage the money and lands awarded Alaska Natives. Those corporations began choosing their lands in the early 1970s.

But far from clearing the way for resumed land transfers to the state, the settlement act added yet another complication that hampered state—and to some extent Native—land selections for years to come. The settlement act contained a provision that directed the Secretary of the Interior to withdraw large areas of the public domain from selection and from other kinds of claims while Congress decided whether to include certain lands in the national conservation systems. Ultimately, the Interior Department withdrew 140 million acres under this provision; these came to be known as "d-2" lands, after the section in the settlement act that called for their withdrawal.

That particular provision was inserted in the settlement act because conservationists and others were afraid that once the Native claims were settled and land transfers began again, there would be a rush of claims on the remaining public domain. Environmental groups and others wanted some of those areas put instead into the national conservation systems.

The fight in Congress over which lands should be put into the conservation systems went on until 1980. The state government, industrial groups, and others argued that putting large areas of essentially unexplored lands into classifications that prohibited or sharply limited development would restrict the state's economic growth and cost the nation valuable resources. Environmental groups and others argued that the large wilderness areas of Alaska offered the nation its last chance to keep undisturbed lands for the enjoyment of future generations.

Alaska National Interest Lands Conservation Act

Passage of the Alaska lands act altered land ownership in Alaska as shown in graph 4 of Figure 1: national conservation systems, 41 percent; federal public domain, 12 percent; other federal reserves, 7 percent; state government, 27 percent; Alaska Natives, nearly 12 percent; other private lands, less than 1 percent.

In 1980, Congress decided to add 104 million acres to national conservation systems in Alaska, mostly to national parks and wildlife refuges. Those 1980 additions, together with conservation lands established before 1980, brought to 154 million acres total national conservation lands in Alaska. Acreage added to parks doubled the national park system throughout the United States and tripled the wildlife refuge system. Alaska now has 75 percent of America's national parks and 90 percent of its wildlife refuges.

The Alaska lands act also designated 56 million acres in conservation units as "wilderness." Wilderness lands are the nation's most protected, with almost all uses that change the character of the land prohibited. More than 70 percent of all federal lands classified as wilderness are now in Alaska.

Summary of Changes

Over 20 years, Alaska shifted from a territory with most of the country's remaining unreserved lands to a state with most of the U.S.'s national parks, wildlife refuges, and designated wilderness areas.

Between 1958 and 1980, the federal government agreed to give up ownership of about 40 percent of Alaska lands; it kept 60 percent. When all land transfers to the state government and Native corporations are complete, federal public domain will make up about 12 percent of acreage in Alaska—down from 80 percent in 1958. Since 1980, national conservation lands have covered more than 40 percent of Alaska, as compared with 10 percent in 1958.

When Alaska became a state, it had 60 percent of the nation's unreserved federal lands; ultimately, it will have about 10 percent. As the public domain lands declined, the conservation system grew. Alaska today has a very large share of the nation's protected lands: 75 percent of national parks, 90 percent of wildlife refuges, 12 percent of national forests, and about three-quarters of the lands designated as wilderness.

LAND OWNERSHIP IN ALASKA

Current State and Native Lands

The state government and the Native corporations have not yet received all the lands they are entitled to under the laws we just discussed. For a number of reasons outlined later in this *Review*, the De-

partment of the Interior was slow in transferring these lands until the past few years, when transfers have been speeded up. In 1985, the state government and the Native corporations each have about 75 percent of the lands they will ultimately receive.

Map 1 shows lands owned by the State of Alaska and the Native corporations as of early 1985. Although these configurations are continually changing as the two receive more of their lands, this map does show the general locations of most state government and Native lands.

State Lands

The state government owns lands throughout Alaska, with most of its holdings concentrated in large blocks in southcentral, southwestern, and interior regions. It also owns substantial acreage at and near Prudhoe Bay on the North Slope; ownership of these lands has brought the state government billions of dollars in royalties and other income from development of the Prudhoe Bay oil field.

State holdings include lands with a number of known or suspected resources, including coal, petroleum, timber, and minerals. It has chosen lands that could be used—and in some cases are being used—for homesites or farms. Some state lands are set aside for parks and wildlife sanctuaries. As discussed more later, the state government is currently classifying all of its lands into a wide range of resource, settlement, and other categories. In a few instances, the State of Alaska owns lands within national conservation units created in 1980. Among the largest of these state holdings are in the Wrangell-St. Elias National Park and Preserve in the southeast corner of mainland Alaska. The state government plans to sell some of its lands within this national park to private owners—a plan the National Park Service opposes.

Native Lands

Native corporation lands are in smaller, more scattered blocks than are state government lands. Most lands the federal government opened for Native selection are around or near the roughly 200 villages in Alaska.

The corporations chose particular lands for a variety of reasons. Native holdings include a mix of traditional subsistence lands and lands with resources that are or may become marketable, including timber, minerals, coal, and possibly petroleum. In a number of cases, corporations have inholdings on national conservation lands—particularly wildlife refuges—because some Native villages are in areas added to the conservation system in 1980. Among the most publicized of such inholdings are those near Kaktovik in the Arctic National Wildlife Refuge, where a Native corporation is exploring for oil.

The white areas on Map 1 (pages 8 and 9) are mostly federal lands—national conservation lands and the remaining public domain. Ultimately, about 35 million acres of that public domain will be transferred to the state government and the Native corporations, to complete their entitlements.

National Conservation Lands

National parks, wildlife refuges, and forests cover about 154 million acres in Alaska. More than 56 million acres of these conservation units are also classified as wilderness—the most protected category of federal land.

Map 2 (pages 16 and 17) shows national conservation units and wilderness areas in Alaska. Other federal land holdings are listed in Table 1.

Alaska's sixteen national wildlife refuges cover 75 million acres. The maritime refuge includes many small islands and other outcroppings along the coastline; this refuge is for the protection of sea birds and other marine life. Several other refuges in coastal areas and around river deltas are for the protection of waterfowl and sea birds. Big refuges also exist for the protection of caribou, moose, bears, and other large mammals. About 25 percent of the lands in Alaska refuges are classified as wilderness. The refuge most publicized in Alaska in recent years has been the Arctic National Wildlife Refuge, in the northeastern corner of the North Slope, where analysts believe there may be commercial quantities of oil in a caribou calving area. (We discuss this issue more later.)

The national park system covers 50 million acres in Alaska and includes parks, preserves, and monuments. Monuments are relatively small—small as compared with other conservation units in Alaska—and are for the protection of places with special archeological or other historical features. Parks and preserves are intended to protect areas of exceptional beauty; the difference between the two classifications is that sport hunting is allowed in preserves but not in parks. In deciding which areas to add to the park system in Alaska, Congress designated some as preserves because of traditional use by sport hunters.[3]

Several of Alaska's largest parks are in mountainous country—in the Brooks Range to the north; the Alaska Range in the Interior (which includes Mt. McKinley, North America's highest mountain); the

[3]Alaskans have argued that other park areas now closed to sport hunting were also traditionally used. Alaska's Congressional delegation has introduced a bill that would open additional areas of the park system in Alaska to sport hunting, but Congress has not approved that bill.

southeast corner of mainland Alaska, where several mountain ranges come together and there are many glaciers; and the area around Lake Clark on the west side of Cook Inlet. Other parks include areas with tidewater glaciers and coastal fiords. More than 60 percent of lands in the park system in Alaska are classified as wilderness.

National forests cover 23 million acres in southeastern Alaska and along the southcentral coast. These lands include much of the commercial timber in Alaska. Logging is a central use of national forests, but these forests also include substantial areas closed to logging—two national forest monuments and about 6 million acres designated as wilderness.

Finally, the systems include about 2 million acres of national conservation and recreation area lands northeast of Fairbanks. These lands are under the control of the Bureau of Land Management; they are managed less restrictively than park or refuge lands but more restrictively than public domain. The lands are in a mineralized area where there are a number of existing claims. This year the bureau is scheduled to issue management plans that will govern future mining and other activities on these lands.

Changing Land Status—Land Freeze to the Present

The biggest land owners in Alaska are, of course, the federal and state governments and the Native corporations. But there are also other land owners in the state; Table 1 shows all the land owners in Alaska in 1985. This table also compares current land ownership with that in 1965, just before the Interior Department stopped most federal land transfers in Alaska.

Federal Lands

The amount of federal land in Alaska dropped from about 360 million acres in 1965 to 260 million acres by 1985; that 100 million acres was transferred to the state and Native corporations.

Public Domain. *Almost all land the federal government gave up over the past 20 years came from unreserved public domain in Alaska, as did the acreage added to the national conservation system.* Unreserved public domain in Alaska declined from nearly 275 million acres in 1965 to about 80 million acres by 1985. When land transfers to the state and the Natives are complete, there will be about 45 million acres of remaining public domain in the state.

National Conservation Systems. *The national conservation systems in Alaska grew from 50 million acres at the time of the land freeze to 154 million acres in 1985.* The big gainers were wildlife refuges, which were increased from 22 million to 75 million acres, and the national park system, which was increased from 7.5 million to 52 million acres. Of those 52 million acres now in the national park system in Alaska, about 19 million are classified as preserves.

National forests in Alaska grew less dramatically, increasing from 21 million acres in 1965 to 23 million acres in 1985. Also created by the 1980 Alaska lands act were 2 million acres in national conservation and recreation areas.

Other Federal Lands. *The biggest federal reserve in Alaska outside the conservation systems is the national petroleum reserve on the North Slope.* It covers 23 million acres; its size has not changed since it was established in 1923. Other federal lands in the state include military reserves and holdings of various other agencies. Such holdings declined from about 10 million acres in 1965 to less than 5 million in 1985.

Native reserves covered about 4 million acres in Alaska at the time of the land freeze. All reserves except the Metlakatla Reserve on Annette Island were revoked by the 1971 Alaska Native Claims Settlement Act. (The Metlakatla Reserve was treated differently because the Tsimshian Indians, who had emigrated from British Columbia, were granted that reserve in a Congressional act in 1891.)

State Lands

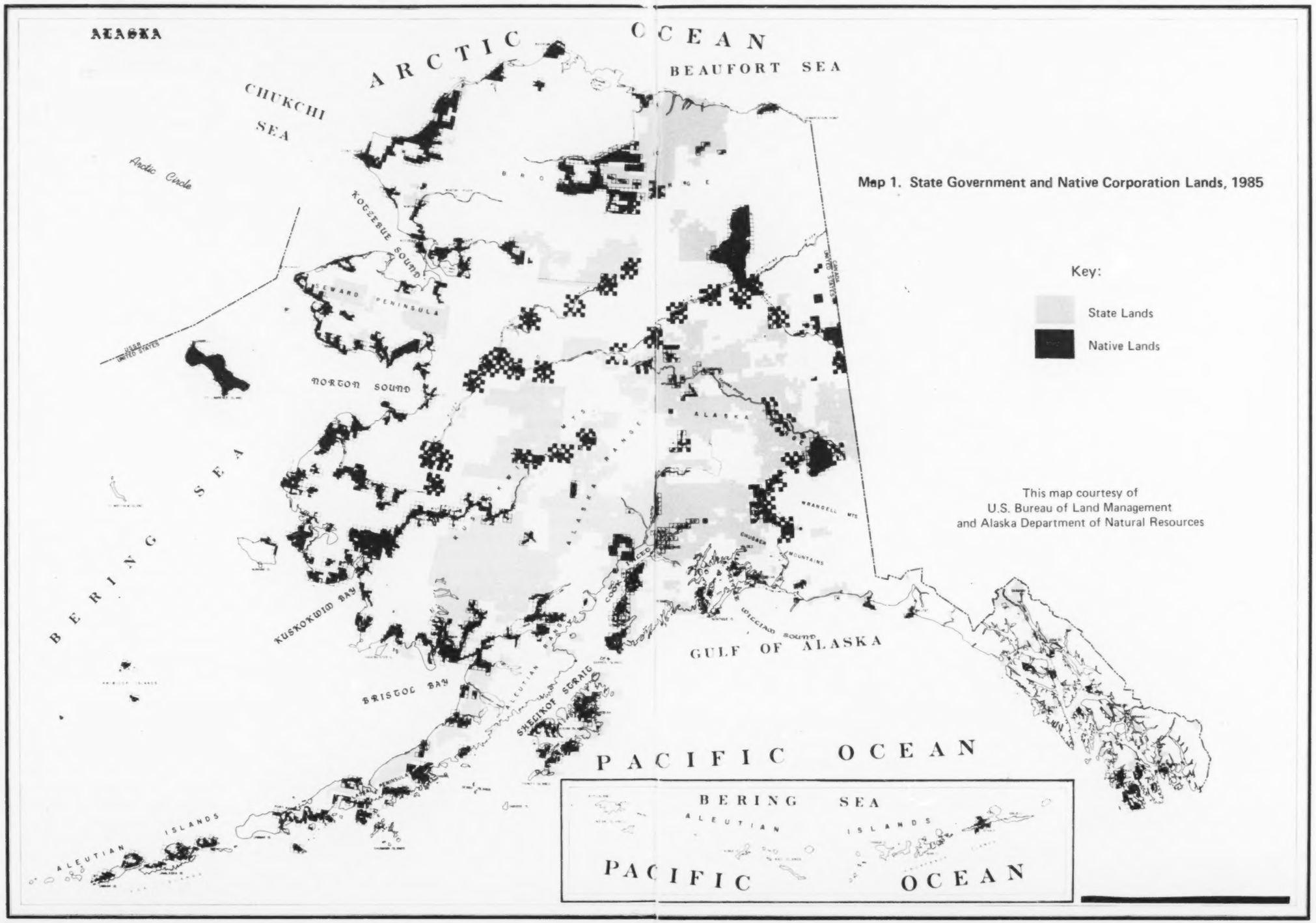
When the land freeze went into effect, the state had received less than 14 million acres of its entitlement. By 1985, it had received more than 80 million acres. The state will ultimately receive, under the statehood act and other laws, more than 105 million acres.

State parks covered about 1 million acres in the late 1960s and 3.2 million acres by 1985. Game refuges and sanctuaries had been established on about 300 thousand state acres in 1965; by 1985, they covered 2 million acres. State forests, a category that did not exist in the 1960s, had been established on almost 2 million acres by 1985. It is not possible to say right now how much land the state might ultimately put into these classifications. (See later discussion of state classification system.)

Municipal Lands

In recent years, municipalities have received more than 400 thousand acres of state land under the municipal entitlement program.

That program allows municipalities to select up to 10 percent of the unreserved state lands within their boundaries. Existing local governments will ultimately receive about 770 thousand acres under this program, and any new municipalities created will be entitled to additional land. Municipalities undoubt-



Map 1. State Government and Native Corporation Lands, 1985

Table 1

Changes in Alaska Land Ownership, 1965-1985
(in millions of acres)

Owner/Classification	1965	1985	Ultimate Entitlement	1985 as Percent of Ultimate	% Change, 1965 to Ultimate*	Ultimate* Ownership
Federal Lands						
Public Domain	274	80.0	45	173%	−83%	
Conservation and Recreation Areas	–	2.2	2.2	100	–	
Wildlife Refuges	22.2	75.4	75.4	100	+240	
Parks, Preserves, Monuments	7.5	52.0	52.0	100	+593	
Forests, Monuments	20.7	23.0	23.0	100	+11	
National Petroleum Reserve	23.0	23.0	23.0	100	–	
Native Reserves[a]	4.1	0.09	0.09	100		
Military Reserves	2.6	1.8	1.8	100	−28	
Other	7.5	2.6	2.6	100	−66	
All Federal Lands	361	260	225	115%	−38%	60%
State Lands						
Parks	0.9	3.2	N/A			
Game Refuges, Sanctuaries, CHAs[b]	0.3	2.0	N/A			
Forests	–	1.8	N/A			
Other	12.3	73.0	N/A			
All State Lands[c]	13.5	+80.0	105.1	76%	+678%	28%
Municipal Lands						
Transfers from State[d]	–	0.4	+.77			
Transfers from Native Corps.[e]	–	N/A	N/A			
Other[f]	N/A	N/A	N/A			
All Municipal Lands	N/A	+0.4	+.77			0.2%
University of Alaska[g]	0.15	0.15	0.15	100%		0.04 %
Private Lands						
Native						
Corporations	–	33.2	44	75%		
Allotment[h]	0.015	0.13	+/−1.2			
Townsite[i]	0.0005	+0.0005	N/A			
All Native[j]	0.0155	33.3	+44			11.7%
Other Private						
Land Disposal Programs (state)	–	.35[k]	N/A			
Other	0.5	1.0[l]	+1.0			
All Other Private	+0.5	1.35[l]	+1.35[m]			+0.4%[m]
All Private Lands	0.515	34.6	+45.35		+8,800	+12.1%
Total, Alaska Lands	375	375	375			100%

*"Ultimate" here means when land transfers from the federal government to the state and the Native corporations are complete.

[a]All Native reserves in Alaska except for the Metlakatla Reserve on Annette Island were revoked by the 1971 Alaska Native Claims Settlement Act.

[b]CHAs = Critical Habitat Areas.

[c]The 1965 and 1985 figures include not only lands to which the state government had patent but also those which the federal government had "tentatively approved" for state ownership; this tentative approval in effect gives the state legal rights to lands which have not yet been surveyed and therefore cannot be patented. See Table 5.

[d]These are lands the state government is transferring to borough and city governments under the Municipal Entitlement Act, which allows municipal governments to select some of the state land within their boundaries. The existing boroughs and cities outside boroughs will ultimately receive 774,000 acres; new boroughs formed in the future could be entitled to more land.

[e]The claims settlement act requires Native village corporations to reconvey some of their lands within communities to local governments for various public purposes; in places where there are no organized local governments, the state takes the land in trust. Originally, corporations were each required to transfer 1,280 acres under this provision, but that requirement was recently changed to allow the corporations and local governments to decide acreages through negotiation. Almost no land has actually been conveyed to local governments so far, and it is not possible to say right now how many acres the village corporations will ultimately convey for local governments.

[f]Municipal governments do own some additional lands, acquired through purchases or other means, but figures on such lands are not readily available.

[g]The University of Alaska owns 150,000 acres that it received from the federal government because it is a land-grant college. This land is considered separate from state land; it is managed by the university and is not subject to the state's land-use plans.

[h]The Native Allotment Act of 1906 allowed Alaska Natives to apply for title to up to 160 acres; the act was revoked by the 1971 Alaska Native Claims Settlement Act, but the thousands of applications pending at that time were considered valid existing rights and are still being processed by the BLM. Figures cited here are rough estimates, based on approved and pending applications and average size of allotments approved in 1984. As of October 1984, 1,029 allotments had been approved; we multiplied that figure by 127 acres—the average size allotment approved in 1984—to reach an estimate of 131,000 acres conveyed under the program from 1906 through 1984. As of early 1985, the BLM had under consideration 9,400 applications; to arrive at a rough estimate of how much land could be transferred if all these applications were approved, we multiplied 9,400 by 127 acres. It is impossible right now to say just how many acres will ultimately be transferred to Alaska Natives under the allotment program; there have been over the years a number of changes in standards for approving allotment applications, which have resulted in reconsideration of applications that were once rejected. There are also pending court suits that could substantially increase the number of allotments ultimately approved, including one case involving 535 allotment petitions.

[i]The Native Townsite Act of 1926 allowed Native communities to apply for title to their townsite lands, although very little land was actually transferred under this act through 1971—when it was revoked by the claims settlement act. However, the Department of the Interior took the position that applications pending in 1971 were valid existing rights, and village corporations were not able to apply for lands that had been applied for under the townsite act. The BLM continues to process townsite applications. Several Native groups have gone to court to try to have lands under townsite application opened for selection by village corporations. The outcome of these court suits will largely determine how much more land will ultimately be conveyed under the townsite act.

[j]The 1985 figures include not only lands that have been patented to the village and regional corporations, but also lands that have been "interim conveyed"; these are lands to which the corporations have been awarded ownership but which are not yet patented because they have not been completely surveyed. See Table 5.

[k]The figure cited here is a very rough estimate of acreage that the state sold or otherwise disposed of under its various public land disposal programs from statehood through 1984. More exact figures are difficult to get. The land disposal program is complex and has changed a number of times over the years. It's not possible to say right now how much land the state might ultimately offer for private ownership.

[l]Estimates.

[m]How much private, non-Native land there will be in Alaska in the future is impossible to say right now; it depends on future public land disposal programs and other factors.

edly owned some land in Alaska in the 1960s, but these figures are hard to get. In any case, municipal holdings at that time were much smaller than they are now.

Another future source of municipal land will be Native village corporations, which are required under the settlement act to transfer some land to municipalities for various public purposes. Little land has actually been transferred to date, however. And we cannot say how much land village corporations will ultimately transfer to local governments because each city and corporation will individually negotiate acreage to be transferred. (A discussion of this reconveyance issue is included later in the *Review*.)

Finally, municipalities also own lands they have bought or otherwise acquired, but figures on such acreages are hard to get; these holdings are relatively small.

University of Alaska

The University of Alaska owns about 150 thousand acres in various areas of the state—an entitlement it received from the federal government because it is a land-grant college. The state government managed these lands until 1984, when the university itself took over management.

Private Lands

Most of the 35 million acres of private land in Alaska in 1985 belongs to the Native corporations. Individuals own less than 2 million acres.

Table 1 divides private lands in Alaska into two broad categories: lands that Alaska Natives own under federal laws and other privately owned lands.

Native Lands. Before the 1971 claims settlement act was passed, Alaska Natives could get title to land under two federal laws. The Native Allotment Act of 1906 allowed Alaska Natives to apply for title to up to 160 acres. The Native Townsite Act of 1926 allowed Native villages to acquire ownership of lands they stood on; individual Natives could also get title to lands within these Native townsites. By the late 1960s, Alaska Natives had acquired very little land under these programs. Individual Natives at that time owned about 15 thousand acres under the allotment act, and villages had ownership of only about 500 acres under the townsite act.

The claims settlement act revoked both these laws, but the federal government recognized as valid those applications pending in 1971. Processing of those applications has continued through 1985 and will continue for some years.

By 1985, Alaska Natives owned an estimated 130 thousand acres under the allotment act, and several thousand applications were yet to be processed. As a result of court cases and federal decisions, the standards for approving or disapproving allotment applications have been changed a number of times; some court cases are still pending. The Bureau of Land Management, which processes those applications, cannot say right now how much land might ultimately be transferred under the allotment program. But it estimates that, depending on what the courts decide and other factors, Alaska Natives could receive title to as much as 1.2 million acres under the allotment program.

Very little land has actually been transferred to Native villages under the townsite act since the late 1960s. It is impossible to say right now how much more, if any, land will ultimately be transferred under that act. Land transfers under this program have been stymied because, in a number of cases, lands that villages had applied for before 1971 are lands that Native corporations established under the claims settlement act also want. Because the federal government considered as valid applications that were pending at the time the settlement act was passed, Native village corporations were not allowed to select lands that were under townsite application. The lands in question are generally right in the villages and are therefore very desirable. Several Native corporations have gone to court to try to get these lands opened for their selection. The outcome of pending court cases will largely determine how much more land will be conveyed under the townsite act.

The big category of Native land is, of course, land that is being transferred to Native regional and village corporations under the claims settlement act. In 1985, corporations had received about 33 million acres, or 75 percent of the entitlement of 44 million acres.

Other Private Lands

Other private lands covered about 500 thousand acres in Alaska in the late 1960s. Today, private lands —separate from those Alaska Natives have acquired under federal laws—may total around 1.3 million acres. Exact figures are not available. The state government estimates that it has sold or otherwise disposed of about 350 thousand acres of its lands since Alaska became a state. Lands individuals have acquired in other ways total around a million acres.

We cannot say right now how much land private individuals might ultimately own in Alaska; that figure depends on how much land the state and federal governments decide to dispose of in the future, how much land Native corporations sell, and other factors.

Ultimate Versus Current Land Status

Figure 2 shows how current land ownership in

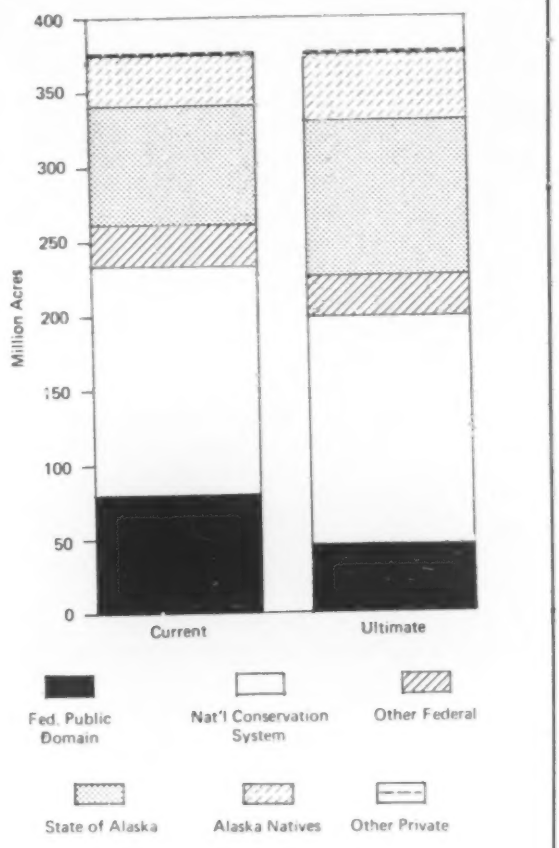


Figure 2. Alaska Land Status in 1985 and Ultimate

Alaska will shift, when land transfers to the state and Native corporations are complete. Basically, about 35 million more acres will be transferred from the federal public domain to the state government and the Native corporations. This figure represents "ultimate" land ownership only in the sense that it shows who will own what when the big land transfers ordered by Congress have been completed. It does not, of course, take into account future land sales and other factors.

LAND MANAGEMENT AND USE IN ALASKA

What difference does it actually make, that land ownership in Alaska today is much different than it was twenty years ago?

One obvious change affecting land use in the state is that there is now a great deal more private land—the millions of acres owned by Native corporations. Until the claims settlement act was passed in 1971, more than 99 percent of lands in the state were public, belonging to either the federal or the state governments. The 44 million acres that will ultimately be transferred to the Native corporations are scattered throughout the state, as shown in Map 1. A number of corporations are now taking resource inventories or doing exploratory work on their lands. We don't know how much land the corporations might open to specific uses. But these are private lands—the corporations can restrict their uses largely as they choose. Alaskans who used these lands when they were public must now adjust to the fact that they are private.

How Native lands are managed will also affect and be affected by federal and state management of adjacent lands. In a number of places, Native corporations own lands within national wildlife refuges and parks. Some development of private lands in national conservation systems is controlled by federal regulations, particularly restrictions on methods of access. But developments that would not be allowed, say, on federal land in national parks or refuges will undoubtedly take place on private lands in or adjacent to conservation units in Alaska. So both public and private land owners in the state will have to adjust to the changed pattern of ownership.

On public lands in Alaska, the two big changes affecting management and use in recent years have been that the state government actually gained ownership of most of its land entitlement, and that the federal government shifted most of its remaining unreserved lands into the national conservation systems. The state government has a management system different from the old federal management of public domain, and management of national conservation lands is much more restrictive than that of any other federal lands.

The full effects of changing management of public lands in Alaska are not yet apparent. Federal and state agencies are now drawing up land-use and management plans for virtually all public land in Alaska.[4] There are certain uses that are prohibited under law on various categories of public lands—petroleum leasing in national parks, for instance. But in many cases, management agencies have a considerable amount of discretion in controlling use. The 1980 Alaska lands act includes a number of provisions that allow federal agencies more leeway in managing national con-

[4]The most publicized attempt of the federal and state governments to draw up a joint management plan for Alaska lands was the Bristol Bay management study, which resulted in a plan that the governor refused to sign. More information on this plan is available from the Alaska Land Use Council.

servation lands in Alaska than in other states. These provisions were included partly because the lands act added such large areas to the conservation systems—huge parks and wildlife refuges—on a scale unknown in the rest of the country. So Congress made some concessions to traditional uses of these new conservation lands.

Within the next few years, plans for public lands in the state will be completed—but there will be a lot of controversy along the way. Already, environmental organizations, industrial groups, and individual Alaskans have protested aspects of proposed federal management plans for national parks and other areas. The state government is in the early stages of land-use planning, but there will undoubtedly also be debate over state plans. Below, we describe in general the state and federal land management systems, but before we describe those systems, we want to point out that it is not only ownership that determines land use. Particularly in the case of resource development, market forces are also crucial.

In an area with, for instance, a nickel deposit, the owner would decide whether to open the land for nickel mining. But actual establishment of a nickel mine would depend largely on the price of nickel and the costs of getting it out of the ground and transporting it to market. Alaska's harsh climate, geographic isolation, huge size, and related factors have historically made the costs of doing business here high. To make development of a nickel deposit—or any other resource—profitable, the price of the resource would have to be high enough to offset high production costs. An important part of those high production costs are transportation costs—many of Alaska's resources are in remote locations, far from existing transportation systems.

So simply the availability of a piece of land does not guarantee its development. Historically, resources have been taken out of Alaska only when their value became high enough to offset the costs and difficulties of development in the state.[5]

Another important point to remember is that federal and state laws protecting air and water quality, governing activities in coastal areas, and in general regulating uses that affect the environment will also influence future land use, regardless of ownership.

State Land Management

The state government considers most of its lands potentially open to most uses.

The Alaska Department of Natural Resources is now classifying all state land—with the exception of lands in special categories discussed below—under a system that designates primary uses but which also specifies that other uses are not prohibited. There are many land classifications, including recreation land, oil and gas land, settlement land, agriculture land, mineral land, and others.[6] So, for example, a tract of state land might be classified as most suitable for recreation, but it would still be open to other uses.

Only about 12 million acres of state land have been classified so far, but the Department of Natural Resources hopes to tentatively classify all state land outside municipalities by the end of 1985. These classifications are part of land-use plans the state government is writing for all its lands.

There are also special categories of state lands, which are established by the state legislature. These are state parks, forests, game refuges, sanctuaries, and critical habitat areas. Amounts of land in these categories are shown in Table 1; altogether they cover less than 10 percent of current state holdings. The most protected of these are state parks, which are closed to mining, petroleum leasing, and other uses that change the face of the land. The state forest system was established a few years ago, to include areas that will be managed specifically for logging; other uses are still allowed. Finally, there are game refuges, sanctuaries, and critical habitat areas for the special protection of wildlife and their habitats. Various activities can be allowed on these lands, but they must be approved by the Alaska Department of Fish and Game and found to be compatible with wildlife protection.

For all lands open to various uses, there are controlling state regulations that say when, where, and how uses will take place.

Federal Land Management

Federal management plans and congressional decisions about additions to the wilderness system will strongly influence future use of national conservation lands in Alaska.

National conservation lands will make up nearly 70 percent of federal lands in Alaska when transfers to the state government and the Native corporations are complete.

Tables A.1-A.3 in the appendix show which uses are allowed and prohibited in parks, wildlife refuges, and forests under federal law. But for uses that are not legally prohibited, federal management agencies have—as we noted earlier—some discretion in controlling land use. Those agencies are now drawing up

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[5] *Alaska Resources Development*, Thomas A. Morehouse, editor, Boulder, Colorado: Westview Press, 1984, discusses in detail the historic and future role of market forces in the state's resource development.

[6] See *State Land Classification and Land Disposal Bank*, Report to the Legislature for Calendar Year 1984, Alaska Department of Natural Resources, for more information on the state classification system.

plans for all conservation lands in Alaska. Also, the National Park Service and the U.S. Fish and Wildlife Service are currently looking at all park and refuge lands in Alaska that have not yet been designated as wilderness—to make recommendations to Congress on whether more park and refuge land should be classified as wilderness.

Another substantial area of federal land—about 80 million acres in 1985 but which will ultimately be reduced to 45 million acres—is the remaining public domain. These lands are mostly small tracts scattered among other public and private holdings. While they are open to more uses than are conservation lands, they are managed more restrictively than public domain lands were 20 years ago. Public domain in Alaska can still be opened for most uses—as shown in Table A.4 in the appendix—but now it must specifically be opened for, say, mining claims, whereas in earlier years no such special openings were required. The Bureau of Land Management is writing management plans for public domain lands in the state.

The final remaining large area of federal land in Alaska is the national petroleum reserve on the North Slope, a 23-million-acre reserve set aside for oil and gas development in 1923. The federal government has several times carried out exploration programs in the reserve, but it is only in the 1980s that lands in the reserve have actually been offered for petroleum leasing. A number of public uses are allowed in the reserve, but it is closed to mining claims. Table A.5 in the appendix outlines allowable uses in the reserve. The Interior Department has management plans for the reserve.

The rest of federal land in Alaska is under the control of various agencies, mostly the military, and is subject to various restrictions on use. These holdings are small, as compared with other federal holdings in Alaska.

Potential Uses of Federal and State Lands

By "potential uses" of public lands, we mean uses that are not prohibited under law. Whether lands are actually put to some specific use depends on many things, including demand for and value of resources on the lands and regulations governing use.

Tables 2 and 3 show, given the restrictions on uses of various categories of public lands, proportions of state and federal lands potentially open to a number of uses.

Almost all state lands in 1985 are potentially open to sport and subsistence hunting and fishing, recreational uses, and to access with motorized vehicles. Specific areas can be closed to any of these uses under state regulation; for example, the Alaska Boards of Fish and Game—which oversee the Department of Fish and Game—can and do close areas to protect depleted wildlife stocks and for other reasons.

More than 95 percent of state government lands could potentially be opened to petroleum leasing; the Alaska Department of Natural Resources has to spe-

TABLE 2

State Lands Potentially Open[a] to Various Uses, 1985

		% of State Lands Open
Total state acreage	+ 80 million	
Acreage open to:		
Sport fishing[b]	80 million	100
Sport hunting[b]	80 million	100
Subsistence hunting & fishing[b]	80 million	100
New mining claims[c]	73.5 million	92
Petroleum leasing[d]	76.8 million	96
Land disposal programs[e]	.7 million	<1
Commercial timber harvest[f]	N/A	–
Recreation	80 million	100
Motorized access[g]	< 80 million	< 100

[a]Under the State of Alaska's land classification system, all state lands with the general exception of state parks are considered potentially available for a variety of uses. Some uses on certain lands require permits or other special authorizations.

[b]State lands are open to hunting and fishing, subject to seasonal, area, and other restrictions.

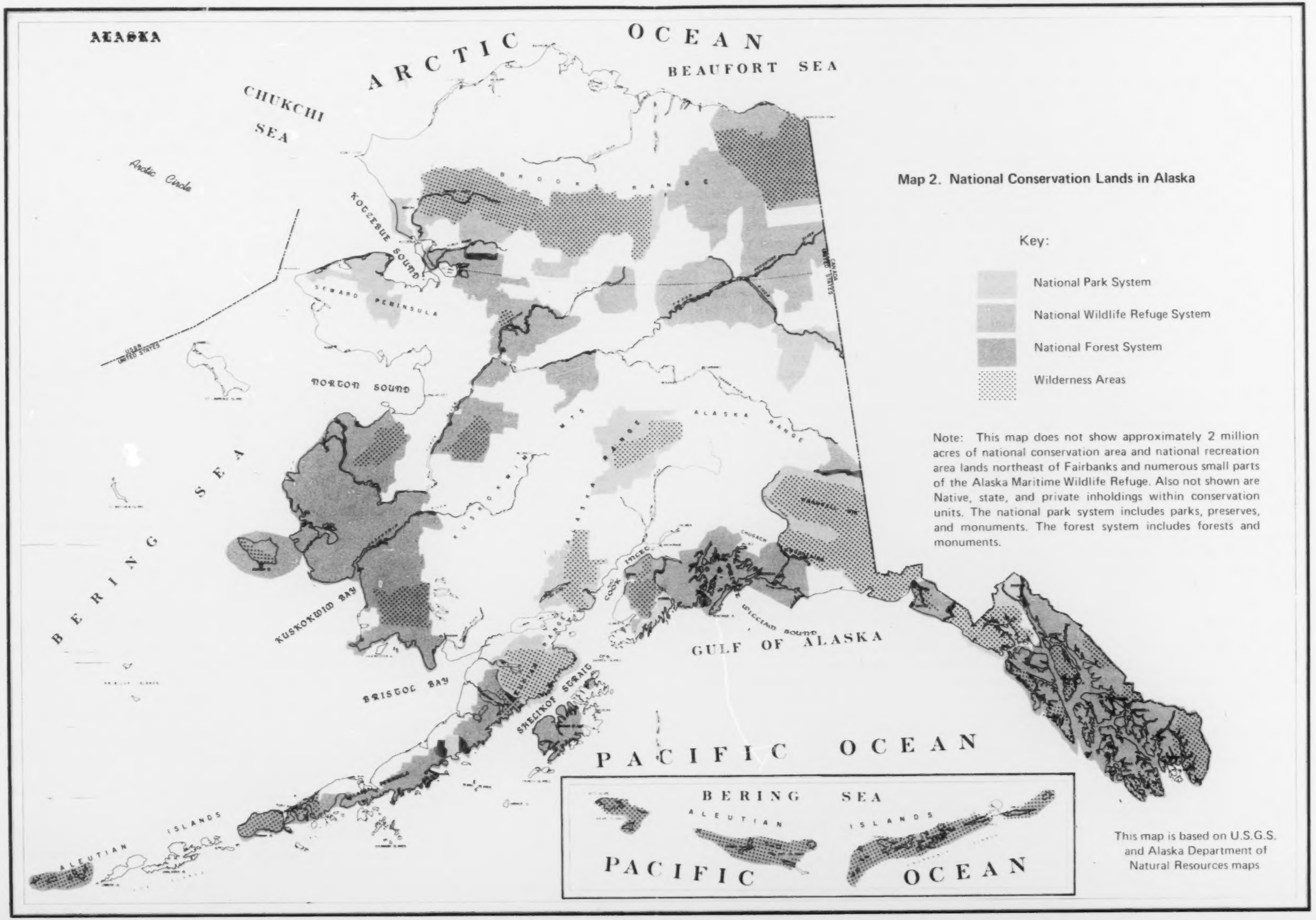
[c]State parks and other state lands under special mineral closing orders are closed to new mining claims.

[d]Most state land outside state parks is potentially open to petroleum leasing, but the Alaska Department of Natural Resources must specifically offer areas for competitive bidding before any leasing occurs.

[e]The figure cited here is the amount of land in the state's Land Disposal Bank as of early 1985. This is land that has been classified as suitable for homestead, agricultural, and other state land disposal programs. More land will likely be put in the bank as additional state lands are classified. Only a portion of the acreage in the land bank will be put up for sale in 1985; see Table 4.

[f]Not applicable; although much state land is potentially open to timber harvest, most commercial grade timber on state lands is found on several million acres that already are in, or are under consideration for, the state forest system.

[g]Use of certain types of vehicles is restricted in specific areas, but overall most areas are open to motorized vehicles.



Map 2. National Conservation Lands in Alaska

Key:

- National Park System
- National Wildlife Refuge System
- National Forest System
- Wilderness Areas

Note: This map does not show approximately 2 million acres of national conservation area and national recreation area lands northeast of Fairbanks and numerous small parts of the Alaska Maritime Wildlife Refuge. Also not shown are Native, state, and private inholdings within conservation units. The national park system includes parks, preserves, and monuments. The forest system includes forests and monuments.

This map is based on U.S.G.S. and Alaska Department of Natural Resources maps

TABLE 3

Federal Lands Potentially Open[a] to Various Uses, 1985

Total Federal Acreage	255 million[b]	Percent of Federal Lands Open
Acreage open to:		
Sport Fishing[c]	255 million	100%
Sport Hunting[d]	223 million	87
Subsistence Hunting & Fishing[e]	245 million	96
New Mining Claims[f]	62 million	24
Petroleum Leasing[g]	141 million	55
Settlement Programs[h]	40 thousand	0.02
Comm. Timber Harvest[i]	i	i
Recreation	255 million	100
Motorized Access	255 million	100

[a]Lands in this table are classified as "potentially open" to a particular use if that use is not prohibited by law; see qualifications for various lands in following notes. Federal agencies require permits or other special authorizations for some uses.

[b]These figures include only federal lands in the public domain, in the national conservation systems, and in the national petroleum reserve. Excluded are military reserves and other small federal land holdings used for a variety of purposes.

[c]All federal lands are open to sport fishing, with area, season, bag limits, and other regulations established by the Alaska Department of Fish and Game.

[d]National parks in Alaska are closed to sport hunting.

[e]National parks that existed before 1980 and some areas of parks created under the 1980 Alaska lands act are closed to subsistence hunting and fishing.

[f]National parks, preserves, wildlife refuges, all wilderness lands, and the petroleum reserve are closed to new mining claims. Claims filed on federal lands before they were closed to new entry are considered valid existing rights.

[g]National parks, preserves, and wilderness areas are closed to petroleum leasing. Wildlife refuges can be opened to leasing if the U.S. Fish and Wildlife Service finds leasing to be compatible with wildlife protection.

[h]These are the federal homesite, trade and manufacturing site, and headquarters site programs. Lands now open under these programs will be closed in October 1986, under terms of the 1976 Federal Land Policy and Management Act—which calls for an end to existing federal settlement programs 10 years after passage of the act.

[i]A significant share of federal land in Alaska could technically be opened to commercial logging, but in fact most commercial grade timber in Alaska is within the 23 million acres of the Tongass and Chugach National Forests.

cifically open areas before any leasing occurs. About 90 percent of state lands are open to new mining claims. State parks and areas under special mineral closing orders are not open to mining claims.

The Department of Natural Resources has so far classified about 1 percent of state government holdings as suitable for the state's homestead, agriculture, and other land disposal programs. Only a portion of these lands are actually put up for sale in any given year. Table 4 shows how much land will likely go on sale in 1985. The notes to Table 2 provide more information about qualifications on uses of state government land.

Table 3 shows the proportions of federal land potentially open to various uses in 1985. Almost all federal land is potentially open to sport fishing, recreational uses, and to access with motorized vehicles; again, any of these areas can be closed to specific uses by regulation.

More than 95 percent of federal land in Alaska is potentially open to subsistence hunting and fishing; national parks that existed before 1980 and some areas of the newer parks are closed to these uses. National parks are closed to sport hunting, leaving about 87 percent of federal lands in the state potentially open.

About one-quarter of federal lands in Alaska could be opened to new mining claims; national parks, wildlife refuges, wilderness areas, and the petroleum reserve are closed by law to new entry. More than half of federal lands in Alaska could be opened to petroleum leasing, but it is very unlikely that much would be opened. A large share of lands that could legally be opened are national wildlife refuges. Refuges can be opened if the U.S. Fish and Wildlife Service finds leasing to be compatible with protection of wildlife. Management plans that the Fish and Wildlife Service is currently drawing up for Alaska refuges will specify areas where leasing might be permissible. National parks, preserves, and wilderness areas are closed to petroleum leasing.

About 40 thousand acres of federal public domain are now open for homesite and other federal settlement programs; these lands and any others opened during the rest of this year will be closed to new entry in October 1986, when all the traditional federal settlement programs will end. The notes to Table 3 provide important qualifiers, and appendix tables A.1-A.5 provide more detail on potential uses of individual categories of federal lands.

Selected Uses, Federal and State Lands, 1985

Table 4 shows a few uses of state and federal lands in Alaska in 1985. It does not, of course, include all uses; we merely intend it to show a sampling of uses of public lands.

TABLE 4

Selected Uses, Federal and State Lands, Alaska, 1985

	Federal	State
Mining Claims[a]	62,600	+/– 50,000[b]
Areas under petroleum lease[c]	5.5 million acres	2.7 million acres
Timber harvests[d]	250 million board feet	28 million board feet
Areas open for settlement	40 thousand acres[e]	35 thousand acres[f]

[a]Figures on how many of these claims are currently producing metallic minerals are hard to get. The Alaska Office of Mineral Development reported that in 1983, 169 thousand ounces of gold, 22 thousand pounds of antimony, 33 thousand ounces of silver, 215 thousand pounds of tin, and some undisclosed quantity of platinum were produced in Alaska.

[b]This is an estimate as of early 1985; most state lands are open to new mining claims and the number of claims is growing rapidly.

[c]Includes only onshore lands.

[d]Harvest figures are for 1984. Almost all the timber harvested from federal lands in Alaska that year was from the Tongass National Forest in southeast Alaska.

[e]See note h, Table 3. Of the 40 thousand acres open under federal settlement programs, about 6 thousand acres had actually been filed on as of early 1985.

[f]This is an estimate of total acreage the State of Alaska will offer for sale under its homestead, homestead-agriculture, and subdivision land disposal programs in 1985.

Mining Claims. There are more than 60 thousand mining claims on federal lands in Alaska today. These include existing claims on lands that were added to the national conservation system under the Alaska lands act. The federal government considers these valid existing rights, and claimholders are guaranteed access to their claims—but access is controlled by regulation. Also included in total mining claims are claims on lands that will be transferred to the state government and to Native corporations. By some counts, half of all claims on federal lands are in areas that will be transferred to the state and the Natives.

The federal government will exclude from transfers to the state any lands on which there are valid mining claims. Claims on lands to be transferred to the Native corporations are less secure. On most—but not all—land going to Native corporations, the federal government will exclude only *patented* mining claims. (Patenting a claim is a long and expensive process; only a few mining claims in Alaska are patented. In most instances, claimholders do not have to patent their claims to hold them.) Areas covered by unpatented claims will be conveyed to the corporations, and their future status is unclear. The Bureau of Land Management says that unpatented mining claims on most lands conveyed to the Native corporations will no longer be under its jurisdiction. What agreements the corporations and the claimholders may reach remain to be seen, but it seems likely that there will be controversy over these claims.[7]

On state lands, there are now an estimated 50 thousand claims. That figure is growing quickly since most state lands are open to new claims.

Petroleum Leases. About 5.5 million acres of onshore federal land in Alaska are under petroleum lease in 1985, including 1.4 million acres in the National Petroleum Reserve on the North Slope, 14 thousand acres in the Kenai National Moose Refuge, and public domain acreage recently opened under provisions of the Alaska lands act. The lands act requires the Bureau of Land Management and other Interior agencies to broadly examine federal lands in Alaska— except those where leasing is prohibited by law—to see if they are suitable for leasing. In areas that are outside known oil and gas provinces, federal law allows noncompetitive leasing. Since 1980, the Bureau of Land Management has opened about 8 million acres of public domain for noncompetitive leasing; leases have been issued on about half that acreage. Leases in the petroleum reserve were issued under competitive bid.

About 2.7 million acres of onshore state land are currently under petroleum lease—the best known and most valuable of which are at Prudhoe Bay and in surrounding areas. Unlike the federal government, the state government has since 1978 required that all lease sales be competitive.

Timber Harvests. Around 250 million board feet of timber were harvested from federal lands in Alaska in 1984, almost entirely from the Tongass National Forest in southeast Alaska. A very small amount was logged from the Chugach National Forest in scuth-central Alaska. On state lands in 1984, about 28 million board feet were harvested. The timber industry was depressed that year, which makes these harvest figures lower than they would have been if demand for Alaska timber had been stronger.

[7]Lands transferred under the major land provisions of the claim settlement act will not exclude unpatented mining claims. Lands transferred under the smaller, special categories will exclude such claims. The Bureau of Land Management can provide more information on the status of mining claims on specific Native corporation lands.

Areas Open for Settlement. Since 1982, the federal government has opened about 40 thousand acres for entry under its homesite, trade and manufacturing site, and headquarters site programs. None of this acreage is directly on roads, and most is far from road systems. As of early 1985, about 6 thousand of the open acres had actually been filed on. All these traditional federal settlement programs will end in October 1986 under terms of the 1976 Federal Land Policy and Management Act. After that, there will be some provisions for leasing federal land for private purposes, but nothing on the order of the old settlement programs.

The Alaska Department of Natural Resources estimates that it will put up for sale about 35 thousand acres in 1985, mainly under its homestead and subdivision land disposal programs.

ISSUES AND OUTLOOK

Up to this point, we have looked at the major federal laws affecting land ownership and use in Alaska, talked about land transfers, and discussed how public lands could and are being used in the state today. The changes in land status that began in Alaska more than twenty years ago and which will not be complete for some time have not happened without complications and controversies. Below, we look broadly at some of the issues and conflicts that have attended these changes and their prospects for resolution.

Land Transfers

Land transfers to the state government and the Native corporations were slow until 1980, when a number of obstacles to land transfers were removed.

The federal government began transferring land to the state government in the 1960s and to the Native corporations in the 1970s. Those land transfers are not yet complete and won't be for some years.

Transfers to the state government were stopped during the land freeze of 1966-1971 and were very limited during the 1970s, when the Native corporations were selecting their lands and most of the remaining unreserved federal lands in Alaska had been withdrawn while Congress decided which to add to the national conservation systems.

The Native corporations received little of their land in the 1970s, for a number of reasons, the biggest one being a long legal dispute over the extent and placement of public easements across Native lands. The Interior Department originally proposed extensive and "floating" easements over Native lands, to accommodate a range of possible future transportation corridors and other developments. The corporations went to court to fight that easement plan. In 1978, the federal government and the Native corporations agreed on a much more restricted system of easements, to be based on known and immediately foreseeable uses. (That agreement allowed land transfers to go forward, but as we discuss later, there remain many questions about actual locations of easements and their future management.)

What really speeded up transfers of land to the state and the Native corporations was passage of the Alaska National Interest Lands Conservation Act in 1980. That act not only resolved uncertainties about what lands were to be added to the national conservation system but also included a number of provisions for smoothing land transfers to the state and the corporations.

Table 5 shows how much land the state government and the Native corporations had selected and received as of early 1985. The federal government allows both to select more lands than they will ultimately receive because some selections won't be approved. The state and the corporations can also each select lands already selected by the other—in the hope that if the original applicant doesn't get the land, the top-filer will. These overselections and top-filings help to insure that the state and the corporations will receive their full entitlements, but they have also added complications to the transfer process. The state government has until 1994 to complete its selections. Native selections are, with some exceptions, mostly complete.

By the start of 1985, the state had received 80 million acres, or about 75 percent of its total land grant. The Native corporations had received just over 33 million acres, which also amounted to about 75 percent of their entitlement.

Lack of Surveys

Lack of surveys on state government and Native corporation lands has raised questions about land title and confusion about boundaries of inholdings.

Only a small share of lands transferred to the state and the Native corporations has been patented—about one-quarter of state government lands and 10 percent of Native lands, as Table 5 shows. Most state land is in a category called "tentatively approved," and almost all Native land is under "interim conveyance." What these lands lack, and must have before they can be patented, are the precise boundary descriptions provided by surveys.

Ordinarily, land owners must have patent to their lands to have full ownership rights. But at the time the statehood act was passed in 1958, and even by the time the claims settlement act was passed in 1971, most of the huge area of Alaska had never been surveyed. If the state government and the Native cor-

TABLE 5

Status of Land Transfers to State Government and Native Corporations, 1985[a]
(in millions of acres)

	Entitlement	Selections	Lands Transferred Patented	I.C./T.A.[b]	Total
State of Alaska	105	110.7[c]	23.1	56.9	80.0
Native Corps.	44[d]	66.6[e]	3.3	29.9	33.2
Village Corps.	26[d]	c	3.2[f]	18.6[d]	21.8[d]
Regional Corps.	18	c	0.1	11.3	11.4

[a]As of the start of the year.

[b]I.C.–interim conveyed; T.A.–tentatively approved. Lands "interim conveyed" to the Native corporations and "tentatively approved" to the state are lands that have been legally transferred to Native and state ownership, but which have not yet been patented because they have not been fully surveyed.

[c]The federal government allows the state to select more lands than it will ultimately receive. The state is continuing to select lands and can do so until 1994.

[d]The figures include nearly four million acres in former Native reserve lands that are being conveyed to villages that chose to take title to those lands and forego other benefits under the claims act.

[e]The corporations were allowed to select more land than they are entitled to, but this figure is somewhat more acreage than they have actually selected. In some cases, corporations have selected the same piece of land more than once, under different provisions of the claims settlement act, in the hope that if the selection is rejected under one provision it will be accepted under another. It is difficult to sort out these duplications in village and regional selections. The Native corporations have essentially completed their selections.

[f]Most of the land thus far patented to villages is former reserve land. See note D above.

porations had received lands only after they had been surveyed, they would still be waiting for most of their lands. To give the state and the corporations control of their lands before they had been fully surveyed, the federal government established "tentative approvals" and "interim conveyances." Documents that transfer unsurveyed lands to the state and the corporations contain general but not precise boundary descriptions. The Bureau of Land Management will ultimately survey all these lands. (See later discussion of survey requirements.)

In the beginning, it was not clear just what ownership rights came with tentatively approved and interim-conveyed lands. But Congress has since declared that these lands carry the same ownership rights as do patented lands—they can be sold, developed, leased, or used as the state and the corporations choose in most cases.

Still, there are problems created by lack of surveys. One of these problems emerged almost immediately after the state government began selling some of its lands to the public. Alaskans who bought state land and subsequently tried to resell it, or to borrow money to build houses on it, discovered that banks and other lenders questioned their land titles—because the state, when it sold the land, had not held patent on it but rather "tentative approval." Tentative approval as a proxy for patent was a concept unheard of in other states.

The Alaska Department of Natural Resources has, over the years, tried to convince banks and other financial institutions that the state in fact has title to these unsurveyed lands. The department reports that in recent years banks and other lenders have become more accustomed to the idea that the state does own —and can sell—tentatively approved land. Native corporations have also faced similar problems because they lack patent to most of their lands. Only when all state and Native land is surveyed and patented will all these title questions be settled.

Another problem the state government and the other major land owners in Alaska face on unsurveyed lands is that the exact locations of inholdings are not known. Inholdings are valid existing rights to lands within larger tracts. There are thousands of inholdings on state, Native corporation, and federal land in Alaska. These can include mining claims, Native allotment parcels, lands acquired under federal settlement programs, and others. The general locations of most of these inholdings are known, but only surveys will establish their precise boundaries.

Survey Requirements and Time

The Bureau of Land Management estimates that the survey work it is now aware of will cost yearly $600 million and take more than 40 years to finish. Additional work added in the future will increase that cost and time.

The Bureau of Land Management (BLM) is responsible for surveying all state government and Native corporation lands—including inholdings on those lands—and also some federal lands in Alaska. The bureau has been working on those surveys for more than 20 years. Table 6 shows how much land the BLM had yet to survey as of 1984 and how much money and time are needed to finish that work.

The BLM has yet to survey the exterior boundaries of 16 million acres of Native regional and village corporation land; it estimates that work will take 20 years and cost $32 million. The boundaries of about 54 million acres of state government lands are yet to be surveyed. The BLM estimates those surveys will cost $180 million and take 30 years. Also on the BLM's work list are surveys of the outside boundaries of 84 million acres of national conservation lands in

TABLE 6

Estimates of Lands to be Surveyed

	Amount Yet to be Surveyed	Estimated Cost ($) & Time
Village & regional corporation lands	15.9 million acres	$31.8 million 20 years
Fragmented parcels[a]	No estimate	$40.0 million
Cemetery & historical sites	2,596 parcels	$8.7 million
State lands	54.0 million acres	$180.0 million 30 years
Nat'l. conservation lands	83.5 million acres	$83.5 million
Mineral segregations[b]	31,500 parcels/ 630,000 acres	$94.5 million
Native allotments	14,000 parcels/ 747 parcels	$112.4 million
Municipal exclusions[c]	No estimate	$40.0 million
Land exchanges & reconveyances	No estimate	No estimate
Other[d]	57,000 acres/ 567 parcels	$3.4 million
Total		$596 million + 40 years

[a]These are small, scattered parcels separated from larger Native holdings.

[b]This is a rough estimate of the number of claims on federal land that will be transferred to the state and the Native corporations. These are mostly on lands that will be transferred to the state. See text discussion of the status of mining claims on lands transferred to Native corporations.

[c]These are community grant lands, mostly in southeast Alaska.

[d]These include federal installations, primary places of residence, and quit claim deeds on Native corporation lands; and federal homesteads, trade and manufacturing sites, homesites, and headquarters sites on national conservation lands.

Source: Alaska Land Use Council, Cadastral Survey, Workgroup Workload Committee, 1984.

Alaska—at a projected cost of $84 million.

But even as time consuming and costly as these surveys of big parcels are, it is the thousands of small parcels within the larger areas that are the most expensive to survey and which will take the most time. The BLM estimates that surveying as many as 14 thousand Native allotment parcels on state, Native corporation, and federal land will cost more than $112 million. Surveying valid existing mining claims on state and Native lands will cost $95 million. Also to be surveyed are about 2,500 Native cemetery and historical sites and a number of small tracts of land fragmented from large Native corporation holdings—that survey work will cost an estimated $50 million.

There are also many more inholdings that the BLM must survey but cannot yet estimate costs and time for. These include lands the Native village corporations will reconvey to municipalities under terms of the claims settlement act and any lands exchanged among the federal and state governments and Native corporations. (See later discussions of reconveyances and land exchanges.)

Exact land status in Alaska, with precise descriptions of who owns what, won't be known until all these surveys are complete—at least forty years from now and probably longer.

Reconveyances by Village Corporations

How much and which land village corporations will turn over to individuals and municipalities will probably not be settled until after the turn of the century.

The Alaska Native Claims Settlement Act requires village corporations that received lands under the act to reconvey some of those lands within villages to individuals and municipalities. That provision was included in the act because village corporations were required to select virtually all public domain lands in and around villages—and a large share of land that villages and individual homes, businesses, and other structures stood on was public domain. Very little land in rural Alaska was in private or municipal ownership at the time the claims act was passed. Some villages had townsites set aside under provisions of the Native Townsite Act of 1926, and in turn some individuals had received title to lands within townsites. But—as the figures in Table 1 show—townsite acreage amounted to only about 500 acres in the late 1960s.

Congress recognized that individual residents and local governments in villages needed title to land—the individuals for their homes and businesses and the local governments for public needs.

These reconveyances promise to take many years and to involve numerous conflicts. Identifying thousands of homeowners and others with individual claims to reconveyed land will be a long process—a process complicated and lengthened by the fact that all these individual parcels will have to be surveyed.

Reconveyances to municipalities have already become controversial for a number of reasons. The claims act provides only a broad description of the kinds of lands to be turned over to municipal governments—these are to include any improved lands that are not conveyed to individuals and as much more land as is needed for community expansion and foreseeable future community needs. Originally, each

corporation was to turn over at least 1,280 acres to a local municipality, but Congress later amended that so each corporation and community can negotiate the acreage. In about 90 Native villages, there are no organized local governments yet, so the state government takes lands in trust for future local governments.

Corporations, of course, have an interest in minimizing the acreage they turn over to municipalities—for the obvious reason that lands are corporation assets but also because lands deeded to municipalities are not necessarily under Native control. The non-Native population of many rural villages is growing, and in some communities, non-Natives already control local governments.

Municipalities—and communities where municipalities will likely be established in the future—hope to get lands for a variety of purposes that corporations may or may not see as necessary public purposes.

Negotiations over reconveyances are underway in many villages. The Alaska Native Foundation estimated in early 1985 that about 17 percent of villages and village corporations had reached either tentative or final agreement about reconveying nearly 28,000 acres. [8] Actual transfer of most of those lands is some time in the future.

The claims act says that land grants to village corporations hinge on these reconveyances to individuals and municipalities—which in turn depend not only on a long identification and negotiation process but also on all of the corporation lands and reconveyed acreage being surveyed. It seems possible that it could be well into the next century before all these lands have been surveyed and reconveyed.

Easements Across Native Lands

It may be ten years before public easements across Native corporation lands are actually marked on the ground. How they will be managed is not yet certain.

The claims settlement act requires that easements be reserved across Native corporation lands to provide access to adjoining public lands. Throughout most of the 1970s, the Interior Department and the Native corporations disagreed about how many and what size easements were necessary. But after the courts ruled in 1978 that the system of easements originally proposed by Interior was too extensive, the corporations and the federal government reached an agreement: easements would be designated based on known and immediately foreseeable uses.

To determine where to reserve easements, the Bureau of Land Management asks the public where existing trails or other access routes are in given areas, and where there might be needs for additional easements. The bureau draws up proposed easements for a tract of land and gives the public and the Native corporations the chance to object to any easements that have been included or left out. Finally, the bureau decides which easements to reserve, describes them briefly on conveyance documents, and marks their general location on maps.

So for all lands that have been and will be transferred to the Native corporations, there are reserved easements. The issue for the 1980s is how those easements will be managed.

In 1985, the bureau estimates that there are perhaps 1,500 to 1,800 easements on Native lands; this is an estimate because to date the bureau has neither kept a running tally of easements nor marked them on the ground. Precise legal descriptions of their locations do not exist. The bureau is now beginning an inventory of easements, which it hopes to finish by 1986. After that, the various federal land management agencies in Alaska will sort out who will manage which easements. The Interior Department's general policy is that easements providing access to a specific agency's holdings will be managed by that agency—so the National Park Service would manage easements providing access to national parks; the U.S. Fish and Wildlife Service would manage easements leading to wildlife refuges, and the Bureau of Land Management would manage easements providing access to public domain. The state government will manage easements leading to state lands.

The Bureau of Land Management estimates that it will be ten years before all easements are marked on the ground. In the meantime, there will be much confusion over where those easements are. Alaskans who want to know where they are easements across a given area of land can get in touch with the BLM and get a general description of their locations. But no one, including the Native corporations, knows exactly where the easements are today.

Trespass on Native Lands

Many Alaskans don't know just which lands belong to the Native corporations. They are too big to fence, and reliable maps showing their boundaries won't be available for some time.

Tens of millions of acres that until recently were public lands have gone into private, Native corporation ownership. Controlling intentional or unintentional trespass on their lands will be difficult for the corporations. It is not yet clear to what extent the federal government will deal with tresspass from pub-

[8] The Alaska Native Foundation was updating those figures as of mid-1985.

lic easements. The fact that these easements are not yet marked on the ground and won't be for some time will exacerbate the problem.

Land Exchanges

The most controversial issue in land exchanges in Alaska today is the extent of the authority of the Department of the Interior to exchange lands in national conservation units.

The Alaska Native Claims Settlement Act allows the Interior Department and other federal departments to negotiate land trades with the state government, Native corporations, and municipalities in Alaska. These land exchanges can be to consolidate land holdings, improve land management, aid development, or for any other public purpose.

A number of land exchanges have been negotiated under terms of the act. Those that have attracted the most attention have involved national conservation lands. Environmental organizations have several times opposed trades in which the Interior Department proposed to give up wildlife refuge or other conservation lands—particularly lands designated as wilderness—in exchange for lands owned by Native corporations. Most often the corporations have wanted particular lands with potential for petroleum or mineral development or to provide access to resource lands. Environmental organizations opposed to such trades have maintained that the Secretary of the Interior does not have the authority to trade away national conservation lands; they say that only Congress can do so.

In an ongoing case, a group of environmental organizations went to court to have declared invalid a land trade in which the Interior Department agreed to give Native corporations ownership of St. Matthew Island in the Bering Sea, which had been a national wildlife refuge also designated as a wilderness area. The Native corporations agreed to give up other lands the Interior Department wanted to add to the national refuge system. The Native corporations, in turn, leased part of the island to oil companies for use as a staging area for Outer Continental Shelf (OCS) operations in the nearby Navarin Basin.

But the island is a seasonal home for marine mammals and for thousands of seabirds. The National Audubon Society and others said that staging area activities, including construction of an airstrip, would drive the wildlife away.

In late 1984, a federal district court ruled that the land trade was invalid and that the Secretary of the Interior had exceeded his authority in authorizing the trade. The Native corporations have appealed that decision.

In another trade, the U.S. Fish and Wildlife Service in 1983 agreed to give the village corporation at Kaktovik subsurface rights to some lands on the coastal plain in the Arctic National Wildlife Refuge in exchange for additions to the refuge in other areas. The corporation has an ongoing oil exploration program on the lands. Environmental organizations were opposed to the Kaktovik trade. They want oil development kept out of the coastal plain because it is a caribou calving area. The oil industry believes there may be substantial petroleum reserves in the area.

Controversy over whether oil development should be allowed in this part of the refuge has gone on for years. In the 1980 Alaska lands act, Congress hedged on making a decision: it called for a limited oil exploration program and a study of fish and wildlife in the area, including an assessment of potential effects of petroleum development on local wildlife. The results of both the exploration program and the wildlife assessment are to go to Congress in 1986. The Fish and Wildlife Service has said that if Congress opts for oil development on the coastal plain, it might consider more land trades to put that area of the refuge in private ownership.

A recently proposed land trade involves land in the Cape Krusenstern National Monument in northwest Alaska. The Interior Department proposes to give up some acreage in the northern part of the monument to the NANA regional corporation in exchange for inholdings the corporation has in another part of the monument. NANA wants that particular land because it lies along the proposed route for an access road to the corporation's lead-zinc deposit at Red Dog, north of Kotzebue. (See discussion of this deposit in the next section.)

In this case, the proposed trade is supported by some environmental groups and opposed by others. Alaska's Congressional delegation has introduced a bill that would give legislative approval to this trade, and it appears likely to be approved.

As yet unresolved in these and other land trades is the extent of authority the Secretary of the Interior and other administrative officials have to trade conservation system lands without Congressional approval. More such trades will undoubtedly be proposed in the coming years, particularly if rising mineral prices make development of Alaska's known deposits more attractive. And undoubtedly there will be more fights over those trades.

Access to Mineral Deposits

How much the proximity of national conservation lands to mineral deposits will hinder their development is not clear right now. Low mineral prices in recent years have dampened development prospects.

One of the bitterest controversies during the

1970s' debate over which and how much Alaska land to add to the national conservation systems was over mineral deposits. Alaska has a number of known, world-class mineral deposits, and analysts believe there are more yet to be found. Those who opposed adding large areas to the conservation systems said that establishment of vast new parks and refuges would stop or at least hinder exploration for and development of minerals. Conservationists and others favoring new conservation lands said that preserving the natural beauty of parts of Alaska outweighed other considerations.

In the end, when Congress passed the 1980 Alaska lands act, it excluded most of the major known deposits from conservation areas, but in some cases, the deposits are surrounded by or are near conservation lands. There have been moves toward development of a handful of these deposits, although in general declining mineral prices have slowed exploration and development in Alaska in recent years.

At the start of the 1980s, the deposit that seemed to have the best potential for fairly quick development was the huge molybdenum deposit at Quartz Hill near Ketchikan. The Misty Fiords National Monument surrounds the deposit, which Congress excluded from the monument when it passed the 1980 Alaska lands act. U.S. Borax, which holds claims at Quartz Hill, is guaranteed access to tidewater.

During the exploration phase, there was a long-running dispute between the company, the U.S. Forest Service—which manages the monument—and environmental organizations, over which was the least damaging route for an access road to tidewater. There is continuing disagreement over where tailings from the site should be dumped.

But controversy over the possible environmental effects of mine development have lessened in recent months because the mine developer is now in no hurry to start production. Molybdenum prices have taken a sharp drop in recent years—from almost $12 per pound in 1979 to about $4 per pound today. The company had earlier hoped to start production in 1988; it now says production may start in four to nine years, depending on the price of molybdenum.

The Forest Service has done a draft environmental impact statement for the project; this draft went through months of review. The agency hopes to revise the draft—including another look at acceptable areas for dumping the mine tailings—and have a final version by the end of 1985.

Another deposit in southeast Alaska, on Admiralty Island, has also been much publicized. This is a rich deposit of zinc, lead, gold, and silver at Greens Creek on the island. The deposit falls within the Admiralty Island National Monument. The Forest Service recently proposed to exclude the deposit and surrounding land from the monument and add acreage from a different area of the island. Environmental organizations oppose that plan, maintaining that the Forest Service does not have the authority to make such a major change in the monument boundaries. The mining company exploring the deposit hopes to begin work on a mine at the site by 1987. Environmental groups have said they will go to court to stop the Forest Service from changing the monument boundaries. The deposit could be developed even if it remains within the national monument, but that development would be under strict rules governing work in monuments.

The deposit that has recently received most attention in Alaska is the world-class lead-zinc deposit at Red Dog north of Kotzebue. The NANA regional corporation owns the deposit and plans to develop it, although there are questions about the feasibility of development at today's zinc prices.

If the price of zinc increases enough to make production profitable, the development would require a port on the Chukchi Sea and a 50-mile access road. The deposit itself is not within a conservation unit, but the access road would cross what is now part of the Cape Krusenstern National Monument.

NANA and the Interior Department have agreed on a land trade to shift lands the road would cross to NANA, in exchange for NANA's giving up inholdings in another part of the monument. Congress is considering a bill that would give legislative approval to the trade. Some environmental organizations oppose giving up the monument land, preferring that the road be routed around the monument.

It remains to be seen whether Congress will approve the trade; if it does, the prospects for development of the mine would be enhanced but not guaranteed. There still would remain the need for higher zinc prices and for financing of the road and port project. NANA and its development partner have asked the state government to put up low-interest loans to pay for the necessary transportation system. .

To what extent the existence of large conservation areas will impede any future mineral development cannot be foreseen. From what has happened so far in the cases described above, it seems likely that environmental organizations will continue to oppose developments in or affecting national conservation lands. But it also looks as if federal management agencies will be willing to consider ways of accommodating developments if the value of the minerals is high enough.

Native Lands After 1991

One of the biggest worries of Native leaders today is what will happen after 1991, when, under existing provisions of the claims settlement act, restrictions on sale or other alienation of stock in Native corporations will be lifted.

Individual Natives who were alive when the act was passed in 1971 share in the land settlement by virtue of owning stock in Native corporations. Congress decided that stock in those corporations could not be sold or seized for most kinds of debt until 20 years after the settlement act was passed. And while non-Natives can currently inherit stock, they have no voting rights until after 1991.

Native leaders fear that if enough Natives sell their stock, or lose it through other means, corporations could go under the control of non-Natives—and with control of the corporations goes ownership of the lands.

The 1980 Alaska lands act does contain provisions that allow corporations to restrict sale of stock after 1991 if two-thirds of the stockholders vote to amend corporation by-laws. But Native groups do not believe these provisions are adequate, and the Alaska Federation of Natives is asking Congress to make a number of changes in the settlement act.

Among these is amending the law so that restrictions on sale of stock and on voting privileges of non-Native stockholders remain in place after 1991—but with corporations given the option of changing their by-laws to allow sale of stock if they choose. Also, the Native federation wants Congress to change the law so that in the future, non-Natives could not inherit stock, as they can now.

Native leaders are also worried about loss of Native lands through taxation or bad debts.[9] Developed Native lands are taxable now, but undeveloped lands are exempt from taxation for 20 years after they are conveyed to the corporations. The Alaska lands act allows corporations to put undeveloped lands in an Alaska land bank. Under current law, lands in this bank could not be developed, but they would be shielded from taxation and from seizure for corporate debts.

Native groups want Congress to change the law so that all settlement lands, developed or not, would receive the protections of the land bank. The Native federation also hopes Congress will allow Native corporations to transfer their lands to nonprofit Native organizations if they choose. Such transfers to Native organizations would be another means of keeping settlement lands in Native ownership.

These and other changes that Native groups want are major, and they would alter a basic premise of the 1971 settlement act—which was that corporations established under the act would, after a certain period, be much like any other American corporation, subject to the same risks and opportunities. Many Native leaders today say that lands awarded Alaska Natives in settlement of their aboriginal land claims should not be at such risk of loss—that their ownership should be protected for future generations. When Congress will consider these proposals and what changes it will make in the law are impossible to predict.

Submerged Lands

Who owns lands *under water* in Alaska is a complicated and controversial question that will not be fully answered for years. The state and federal governments and the Native corporations all have important stakes in several big disputes about ownership of submerged lands in Alaska and off its coast. The main disputes are (1) where is the boundary between offshore, state-owned waters and the federal Outer Continental Shelf? (2) how many of Alaska's thousands of rivers and lakes are navigable? and (3) how much submerged land should be charged against the land entitlements of the state and the Native corporations?

Another related question that is becoming more pressing in Alaska as more land goes into private ownership is this: to what extent can private individuals or corporations who own submerged lands under lakes or rivers control public use of just the *water*?

Offshore Boundary Dispute. *The State of Alaska could gain $1 billion in revenues if the courts decide in the state's favor in a dispute with the federal government over state-federal offshore boundaries in the Beaufort Sea. The state could collect substantially more in the future if offshore boundary and other disputes are resolved in its favor.*

The 1958 Alaska Statehood Act, in addition to granting the new state 104 million acres onshore, also give it ownership of submerged lands up to 3 miles offshore. These offshore state lands total around 40 million acres. Beyond these state waters are the federal OCS lands.

The state and the federal government disagree about how to determine the boundary between state and federal waters. The methods of determining the boundary are complicated, but the important difference is that the state method puts some areas in state-owned waters that the federal method puts in the federal OCS. These areas of disputed lands are important

[9]Several village corporations have mortgaged some of their lands. The Alaska Native Review Commission has recently held hearings throughout Alaska on the effects of ANCSA. The commission in late 1985 issued a report critical of ANCSA and describing the poor financial condition of a number of village corporations.

because Alaska's offshore waters are believed to have large reserves of oil and gas.

Of particular dispute is the boundary between state and federal waters in the Beaufort Sea, where analysts believe there may be billions of barrels of oil. Past federal lease sales have included tracts that the state claims, and the state has taken the federal government to court over the issue.

Pending a court decision about who owns the disputed tracts, the federal government has put in escrow the revenues it has received from them. The state stands to gain about $1 billion if the courts decide in its favor. The federal government has also agreed to give the state some say in future decisions about including tracts that the state claims in federal OCS sales.

A second dispute between Alaska and the other coastal states on one side and the federal government on the other involves what share of federal royalties states should get from federal OCS leases adjacent to state waters. Federal law says that coastal states are entitled to a share of these revenues because drilling in OCS lands next to state lands can drain reserves from the adjacent state lands. The states and the federal government have not agreed on what the state share should be. The federal government has offered the states 16.6 percent of those revenues; the states have asked for 37.5 percent. Negotiations are continuing.

Just how much might be at stake for Alaska in this dispute is uncertain right now because exploration of the Alaska OCS is just beginning, and there have as yet been no commercial finds. The pace and extent of development of the Alaska OCS depend not only on size of discoveries but also on the future price of oil and other factors that cannot be predicted. But if the Alaska OCS is in fact found to be rich in oil, and that oil is developed relatively soon, the State of Alaska could stand to gain billions of dollars in shared revenues over the next decades.

What is Navigable? *The state benefits in important ways when lakes or rivers are declared navigable. The land under navigable waterways is not charged against the state's land grant; it is in addition. Land under navigable waters on federal and Native corporation land belongs to the state; the state manages those lands and owns any minerals therein.*

In addition to onshore and offshore land grants, the Alaska Statehood Act also gave the state government—with some exceptions—ownership of the beds of navigable rivers and lakes in Alaska. This could amount to a lot of land. Lakes and rivers cover an estimated 13 million acres, or 3 percent of land, in Alaska. How many of these water bodies are in fact navigable is what the state and the federal government disagree about.

The federal Bureau of Land Management makes the initial determination about which waterways in Alaska are navigable, but the courts have the final say if the state challenges those determinations—as it has in a number of cases. The issue of navigability is a very complex one that has been before courts throughout the United States. And there are still no hard and fast standards for determining navigability as a result of past court decisions.

Broadly speaking, waters are considered navigable if they are wide and deep enough to be used by commercial boats. It is chiefly on the issues of what constitutes "commerce" and what size commercial boats are that the state and federal governments disagree.

The federal government uses very specific criteria for determining navigability: lakes and rivers must have been used or have been capable of being used for commerce by 18-to-24-foot wooden flat-bottomed boats at the time Alaska became a state in 1959. And it has a narrow definition of what constitutes commerce, limited to a few activities.

The state government, on the other hand, takes the position that commercial travel includes a much broader range of activities in a much greater variety of boats and other vehicles. The state says that boats carrying mail or miners traveling by boat to their claims and a host of other activities constitute commercial travel. It maintains that use by smaller boats, including inflatables, rafts, and others, renders a waterway navigable. The state also takes the position that, because lakes and rivers in Alaska are frozen a large share of the year, use of a frozen waterway by snowmachines, dog sleds, and other vehicles makes the waterway navigable. Finally, because many places in Alaska can be reached only by air, the state says that waterbodies should be considered navigable if planes on floats or skis land on them.

The state has won some points in the battle over navigability. The Interior Department's Board of Land Appeals, to which those dissatisfied with BLM's decisions can appeal, tentatively ruled in 1983 that the Matanuska River north of Anchorage was navigable in part because guide companies offer trips on the river in inflatable rafts to paying customers. But a final decision in this case has been held up until the U.S. District Court rules on a lawsuit brought by the state over navigability of the Gulkana River. The state claims the river is navigable, in part because commercial guides use it for raft trips and other travel. The decision in this case, which is expected to be made in 1985, will be important in determining how liberal or conservative the Interior Department will be in the future in assessing navigability.

The state recently lost a case in which it had maintained that a lake was navigable because it was

heavily used by floatplanes; the court said that use by floatplanes was irrelevant to the determination of navigability.

The Native corporations also have an important stake in decisions about navigability. One of the main worries of the corporations has been that if they took conveyance of lands with waterbodies that were later declared to be navigable, they would not only lose ownership of the minerals under those waters but also some acreage that had been charged against their entitlements. The Interior Department recently decided that any acreage the Native corporations lose when lakes or rivers on their lands are declared navigable will be replaced. This means that land transfers to Native corporations will not really be final until all the disputes over navigability have been settled.

The BLM has so far made initial decisions about navigability on the 33 million acres already transferred to the Native corporations and the 80 million acres transferred to the state. That agency estimates that if the courts uphold its standards for determining navigability, it could complete determinations on remaining state and Native lands within 5 years. If the courts favor the state's broader criteria, deciding which of Alaska's lakes and rivers are navigable will take much longer.

Submerged Lands Charged Against State and Native Entitlements. *The state and the Native corporations might be able to select hundreds of thousands more acres if certain submerged lands are not charged against their land grants.*

There has also been an ongoing dispute between the state and the Native corporations on one side and the federal government on the other about submerged lands under *non-navigable* waters. Until 1983, the Interior Department charged such submerged lands against the state and Native entitlements. The corporations and the state maintained that much of this land under non-navigable waters—large areas of marshland, for instance—would not be useful to them.

In 1983, the Interior Department changed its policy and said it would not charge the state or Native corporations for acreage under certain non-navigable waters: lakes more than 50 acres and rivers wider than 200 feet. This means that large areas under waters that are finally determined to be non-navigable will not be charged against state and Native entitlements.

This ruling will have the effect of allowing the state and the Natives to select more land since those specific lands under water will not count against their entitlements. Estimates of how much additional land they will actually be able to select vary substantially. In large part, the acreage involved will depend on how many waterbodies are finally declared navigable. The Alaska Department of Natural Resources estimates that the state might be able to select anywhere from 180 thousand to 2 million additional acres, and the Native corporations anywhere from 120 thousand to 1.4 million extra acres.

Environmental organizations oppose this new policy, however, and have gone to court to try to have it reversed. They fear that additional land selections—particularly selections of Native corporations—could come out of national conservation lands. A decision in this case is sometime in the future. Alaska's congressional delegation has also proposed a legislative settlement of the issue, but Congress is not likely to consider such legislation this year.

Public Access to Waters. *Who controls use of streams and other waters crossing private lands?*

An issue related to those discussed above has to do with public use of waterways in Alaska, regardless of who owns the land under the waters. The question is this: Does ownership of the bed of, say, a stream give the owner rights to control public use of the *water* over his land? The State of Alaska takes the position that regardless of who owns the bed of the water, public use of and access to that water is guaranteed. This would mean, for example, that no private owner could put a fence across a stream to stop canoeists from floating down it. The state distinguishes such use from actual trespass on private land; a canoeist could not, for instance, walk across private land to get to a stream.

Some Native corporations and other private land owners believe, on the contrary, that owners can in fact restrict use of water running over their lands.

As more lands go into private ownership in Alaska, disputes over access to waterways are becoming more frequent. The state is now preparing a court case that will test this issue.

CONCLUSIONS

For more than 20 years after Alaska became a state, Alaskans and others interested in Alaska lands concentrated on the big battles for ownership of the public domain. At base, most of the battles were between those who wanted to keep the lands the way they were and those who wanted them available for development. And implicit in the ownership fights was the assumption that once Congress had decided ownership of the former public domain lands, the future management and use of those lands would also be largely decided.

But now, 5 years after Congress shifted most of the remaining public domain lands into the national conservation systems, it is apparent that there are many land management and use issues that won't

be resolved for a long time to come. Ownership of lands certainly makes a difference in their management and use, but so do other factors—including the latitude given land management agencies, the value of and demand for resources on the land, and state and federal environmental protection laws. The old struggles over the best use of Alaska lands—preservation or development—go on in various ways.

Among the things that will strongly influence future use of public lands in Alaska are the management plans state and federal agencies are now drawing up for virtually all public lands in the state. A few are already out in draft form. Some public lands—particularly national conservation lands—are closed by law to specific uses. But in many instances, management agencies have leeway in deciding which uses will be allowed, where, and under what controls. The management plans will deal with all aspects of land use. For example, the plans for national wildlife refuges will say what acreage might be opened to petroleum leasing, make recommendations on what areas should be added to the wilderness system, specify how the Fish and Wildlife Service will regulate access to private property within the refuges, and much more. Already these management plans have raised controversy, and there will be more in the immediate future as the plans are completed.

Another area in which the lines of management are not yet drawn hard and fast is in land exchanges. In several well-publicized instances, federal agencies have agreed to exchange lands within national conservation units for Native corporation lands elsewhere. Environmental organizations have opposed these trades on the grounds that only Congress has the authority to make such decisions about conservation lands. In one case, the legality of a land trade involving national monument lands is being examined by the courts. In another, Congress is considering whether to approve a similar trade already agreed to by the Interior Department. Court and congressional decisions in these and other cases will help define the limits of future land trades.

To what extent federal agencies will try to accommodate or hamper mineral development on or near conservation lands also remains to be seen. About a dozen known world-class mineral deposits were excluded from the new conservation units created in 1980; federal agencies regulate any access across conservation lands to deposits. There has been controversy during exploratory work on several of those deposits, with environmental groups charging that federal agencies have not been strict enough in protecting conservation lands, and industry charging that they have been too strict.

But no production is actually underway at any of these sites right now. Aside from what federal management agencies do or don't do, Alaska's mineral deposits won't be developed until mineral prices rise high enough to outweigh the high costs and difficulties of mining in Alaska. Mineral prices have fallen in recent years, dampening prospects for mineral development. Many battles over mining in or near conservation lands are therefore in the future, if prices rise high enough to make mining in the state more profitable. It seems likely that if Alaska's large mineral deposits become valuable enough, they will be developed—under as yet undetermined levels of government regulation.

There are also still unresolved questions about submerged lands that will influence future land management and use in Alaska. These include disputes over which lakes and rivers in Alaska are navigable and therefore belong to the state government, and whether the state and the Native corporations will be allowed to select additional lands to replace some submerged lands—marshlands, for instance—that they say are not useful to them. Many cases involving these submerged land issues are now before the courts.

Native corporations too face many land management decisions, and some of these involve the same question raised so often about public land management in Alaska: to preserve or to develop? Many corporations are inventorying their lands for timber, coal, minerals, and other resources. Some have already started to develop their resources. Corporations in southeast Alaska have been logging on their lands for several years. But some Native stockholders want their lands left as they have historically been.

Another crucial question Native land managers face is how to keep their lands in Native ownership after 1991, when for the first time stockholders will be able to sell their stock. Native groups are asking Congress for changes in the claims settlement act that would prohibit sale of stock to non-Natives and provide other safeguards of Native ownership. What Congress will do is uncertain, but whatever it decides will have major effects on future Native land management.

Resolution of the land management questions discussed above will affect all major land owners in Alaska as well as environmental organizations and industries that have interests in Alaska lands. But it is individuals who have been and will be most directly affected by the changing land ownership and management in the state.

There are thousands of pieces of private property and mining claims on Native corporation, national conservation, and state lands in Alaska. The Bureau of Land Management is surveying all these private inholdings, but it will be well into the next

century before that job is done. Until then, the precise boundaries of these parcels won't be known. In some cases, government agencies have and will continue to challenge the validity of private property claims. The status of mining claims on most Native corporation land is uncertain. Government agencies regulate access to private property within public lands, particularly conservation lands. There are means by which the federal government can condemn private property in conservation units.

Individual hunters, fishermen, boaters, hikers, and others have already seen changed regulation of public land use and are likely to see more when various land management disputes are settled. More than 40 million acres that until recently were public lands are now private Native corporation lands. Maps showing the exact locations of all Native lands won't be available for some time. There are public easements across Native lands, but these easements are not marked on the ground and probably won't be for another decade.

In addition to all the complications individuals and agencies face because of changing land ownership and management in Alaska, there are also broad federal and state laws that regulate land use, regardless of ownership and management. These include, among many others, laws that protect air and water quality, that regulate work affecting wetlands and navigable waters, and that restrict activities in fish streams. Independent of land ownership, these laws will certainly influence future land use in Alaska.

The land management disputes and uncertainties described in this *Review* will not soon be settled. Alaskans and other Americans with strong beliefs about the best uses of lands in the state will continue to press their cases—in the courts, with Congress, in the state legislature, with government management agencies, and before the public.[10]

[10]Detailed discussion of land issues other than those of current ownership and management are included in *Alaska Resources Development—Issues of the Eighties*, ed. Thomas A. Morehouse (Westview Press, Boulder, Colo., 1984), 212 pp.

APPENDIX: ALLOWABLE USES OF SPECIFIC FEDERAL LANDS IN ALASKA

TABLE A.1

National Parks and Preserves in Alaska, Allowable Land Uses, 1965 and 1985

	1965	1985	
		Parks/Monuments	Preserves
Total acreage	7.5 million acres	52 million[a]	
		32 million	20 million
Sport fishing	all open	all open	all open
Sport hunting	closed	closed	all open
Subsistence H and F[b]	closed	9.7 million closed	all open
New mining claims[c]	all open	closed	closed
New petro leasing	closed	closed	closed
Settlement	closed	closed	closed
Timber harvest	closed	closed	closed
Recreation	all open	all open	all open
Motor access[d]	all open	all open	all open

[a]Of the 52 million acres of parks and preserves, more than 32 million acres are designated as wilderness; in general, most uses that are prohibited in wilderness areas are already prohibited in the park system, so it is not necessary to separate wilderness areas here.

[b]The original Glacier Bay, Katmai, and Mt. McKinley National Parks were closed to subsistence hunting and fishing; those same areas, plus the 1980 additions to Katmai and Glacier Bay Parks and the new Kenai Fiords are now closed to subsistence hunting and fishing. Within parks open to subsistence hunting and fishing, such uses may be restricted to specific areas.

[c]National parks in Alaska were open for mineral location and mining until passage of the Mining in Parks Act in 1976, which closed the parks to new entry.

[d]In general, all parks and preserves in Alaska, including areas designated as wilderness, are open to some motorized vehicles but closed to others. Snowmachines and motorboats are essentially allowed throughout the parks and preserves; off-road vehicles are not. Planes can be flown into parks and preserves for recreational uses but not for use in subsistence hunting. Helicopters are prohibited except under special permit from the park superintendent.

TABLE A.2

National Wildlife Refuges in Alaska, Allowable Land Uses, 1965 and 1985

	1965	1985	
		Nonwilderness	Wilderness
Total acreage	22.2 million	75.4 million	
		56.4 million	19 million
Sport fishing	all open	all open	all open
Sport hunting	all open	all open	all open
Subsistence H and F	all open	all open	all open
New mining claims[a]	3.1 million open	closed	closed
New petro leasing[b]	all potentially open	potentially open[b]	closed
Settlement	all closed	closed	closed
Timber harvest[c]	all potentially open[c]	potentially open[c]	closed
Recreation	all open	all open	all open
Motor access[d]	all open[d]	all open[d]	all open[d]

[a]Historically, most wildlife refuges in the United States have been closed to hard-rock mining; of the eighteen refuges that existed in Alaska before 1980, all but two were closed to mining. The 1980 Alaska Lands Act closed newly created refuges to mining.

[b]Wildlife refuges can be opened to oil and gas leasing if the FWS judges such leasing to be compatible with wildlife protection. Some acreage in the Kenai National Moose Refuge in southcentral Alaska has been under petroleum lease for a number of years. That is the only refuge with petroleum leases in Alaska today, but the FWS is preparing comprehensive plans for all Alaska refuges that will specify whether oil or gas leasing would be acceptable (compatible) in other refuges. Areas designated as wilderness—19 million acres of the 75 million refuge acres—are closed to petroleum leasing. A maximum of 56 million acres in refuges could be opened to oil and gas leasing, but the actual figure is likely to be much smaller. In addition, 19 million acres of the coastal plain of the Arctic National Wildlife Refuge are under a special oil or gas exploration program authorized in the Alaska lands act. Leasing and development there would have to be approved by Congress.

[c]Refuges (except areas designated as wilderness) can be opened for timber harvest if such harvest is for the benefit of the wildlife. For example, the Kenai National Moose Range has been opened in the past to harvest older trees to allow growth of young, shrubby vegetation that moose feed on.

[d]Fixed-wing aircraft, motorboats, and snowmachines are allowed in most areas of Alaska's wildlife refuges, including areas designated as wilderness, where these vehicles have been traditionally used. Certain areas of individual refuges have historically been closed to specific motorized vehicles, and these areas remain closed. Use of off-road vehicles and helicopters is generally prohibited in the refuges unless specially permitted by the refuge manager.

TABLE A.3

National Forests in Alaska, Allowable Land Uses, 1965 and 1985

	1965	1985	
		Nonwilderness	Wilderness[a]
Total acreage	21 million acres	23 million	
		17.4 million	5.6 million
Sport fishing	all open	all open	all open
Sport hunting	all open	all open	all open
Subsistence H and F	all open	all open	all open
New mining claims	all open	open	closed
New petro leasing[b]	all potentially open	all potentially open	closed
Settlement	all closed	closed	closed
Comm. timber harvest[c]	all open	15 million open[c]	closed[c]
Recreation	all open	all open	all open
Motor access[d]	all open	all open	all open

[a]Includes areas within forests designated as monuments.

[b]National forest lands can be opened to petroleum leasing, but there are no lands currently under petroleum lease in either the Tongass or the Chugach National Forests.

[c]Wilderness areas of the national forests are closed to commercial timber harvest. Also closed are about 2.6 million acres in the Tongass National Forest under a special designation that emphasizes uses other than logging.

[d]Generally, motor vehicles can use any part of the national forests, including wilderness areas. The Alaska lands act specifically allows reasonable access through wilderness areas for inholders and for subsistence and recreational users, with traditional means of access—including planes, snowmachines, and motorboats. Restrictions on use of off-road vehicles and other vehicles are in effect in certain areas.

TABLE A.4

Federal Public Domain in Alaska, Allowable Land Uses, 1965 and 1985

	1965	1985
Total Acreage:	274 million acres	+/– 80 million acres
Sport fishing	all open	all open
Sport hunting	all open	all open
Subsist. hunt & fish	all open	all open
New mining claims	all open	10.4 million open/ 45 million potentially open
New petroleum leasing	all open	8.1 million open/ 45 million potentially open
Settlement	all open	40 thousand open
Commercial timber harvest[a]	N/A	N/A
Recreation	all open	all open
Motorized access	all open	all open[b]

[a]Technically, public domain lands could be opened for commercial timber harvest, but in fact almost all commercial timber on federal lands in Alaska is within the Tongass and Chugach national forests.

[b]Although there are no general restrictions on use of motorized vehicles (including airplanes, snowmachines, off-road vehicles, motorboats) on public domain, there are restrictions in specific areas.

TABLE A.5

National Petroleum Reserve in Alaska, Allowable Land Uses, 1965 and 1985

	1965	1985
Total Acreage:	21 million acres	23 million acres
Sport fish	all open	all open
Sport hunting	all open	all open
Subsist. hunt & fish	all open	all open
New mining claims[a]	all closed	all closed
New petrol. leasing[b]	all closed	8.8 million open/ 23 million potentially open
Settlement all closed	all closed	all closed[c]
Timber harvest	N/A	N/A
Recreation	all open	all open
Motor. access[d]	all open	all open[d]

[a]The 1923 executive order that created this national reserve closed it to hard-rock mining; it would require special Congressional action to open the reserve to mineral entry. Residents of North Slope villages within the reserve can obtain permits from the BLM to take coal for personal use from the exposed beds of coal .

[b]The reserve is managed primarily for oil and gas development, but acreage in the reserve was not opened for leasing until 1982. Before that, the federal government carried out several exploration programs to determine its potential.

[c]Since its creation, the reserve has been closed to federal settlement programs, including the Native allotment program. The 1980 Alaska lands act specially approved some Native allotments within the reserve; acreage included in these allotments is slight.

[d]The reserve is closed to cross-country travel in the summer, when vehicles can damage the tundra. Areas of special protection for wildlife may also be closed to aircraft or other vehicles at various times.

INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH
University of Alaska
707 "A" Street, Suite 206
Anchorage, Alaska 99501

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ALASKA'S SMALL RURAL HIGH SCHOOLS: Are They Working?

INTRODUCTION

In 1976, Alaska chose an approach to providing secondary education in remote rural villages that was at once very unusual and very conventional. Rather than sending students, mostly Eskimo and Indian, to boarding programs far from their homes, the state agreed to provide a high school in every village that wanted one.

Today, nearly a decade later, many people in the state are asking: Are the students in these small and expensive high schools receiving a high quality education? Do the advantages that these schools offer—proximity to family and community, tutorials, travel and other special programs—constitute a triumph for rural education? Or do the disadvantages—limited variety in teachers and courses, lack of teachers with specialized subject-matter knowledge, isolation, inadequate vocational or college preparation—condemn rural students to second-rate schooling?

To answer these questions, we need to understand the alternative to the small high schools. What kind of education did Alaska's former boarding school system offer village students? Below, we describe one student's experience with the state boarding program—an experience unfortunately common during the boarding school era:

MAJOR FINDINGS

1. Most rural communities visited want the village high schools. These small local schools offer important advantages: (1) students can grow up with their families; (2) students get a lot of individual attention from teachers; (3) students play key roles in school activities; (4) communities can exert considerable control over local high schools and use them to pass on Native culture and languages; (5) the schools bring much needed community services, increase employment, and contribute to community spirit.
2. Most rural communities visited also want some type of boarding school option.
3. As a consequence of replacing the boarding school system with village high schools, the graduation rate of rural adolescents has increased dramatically.
4. Some small high schools offer a high quality educational program well adapted to local circumstances and community priorities. Others are having serious problems.
5. Schools that are working well exhibit:
   - A strong partnership between teachers and the community.
   - Agreement between teachers and the community on a theme for the educational program.
   - An enterprising teaching staff.
   - A central office that encourages local professionals and the community to take the initiative in adapting schooling to local needs.
6. Districts and schools have developed many innovative strategies (described in the full report) to address the educational problems of rural adolescents in small high schools. These problems include: (1) limited variety of courses, teachers, and activities; (2) the lack of specialized vocational courses; (3) inadequate preparation for college; (4) low achievement test scores; (5) insufficient opportunities for rural students to become competent and confident in the world beyond their villages; and (6) difficulties in making the critical transition to adulthood after graduation.

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Institute Editor: Ronald Crowe
Editorial Assistant: Kandy Lee
907-278-4621

Main Institute Office:
707 "A" St., Suite 206
Anchorage, Alaska 99501

FEATURE

Judith Kleinfeld, G. Williamson McDiarmid, and David Hagstrom

Alaska's Small Rural High Schools: Are They Working?*

Judith S. Kleinfeld is a professor of educational psychology, and G. Williamson McDiarmid is an assistant professor of education; both are with the University of Alaska's Center for Cross-Cultural Studies. David Hagstrom is an associate professor of education with the university's College of Human and Rural Development.

Going to Anchorage for High School in 1971

Staying close to her cousin, Emily walked off the plane into the Anchorage airport, which was awhirl with white people. Coming from a village of 400 Yupik Eskimo, Emily had never seen so many people—so many white people—all at once.

The Boarding Home Program coordinator drove Emily to the split-level home in the suburbs where she was supposed to live for the school year. The waxed wooden floors gleamed, and fresh finger-towels hung in the guest bathroom. The family thought that having a teenage girl from another culture living with them would be exotic—and the boarding fees provided by the state would generate extra income.

Although she was a high school freshman, Emily's test scores showed that she read below the sixth grade level. Most village freshmen, the school district had found, could not do ninth grade work. In the classroom, these students huddled together in the back, unwilling to speak. Even some of the words bandied about in class—"suspension," "prom," "detention"—were totally new to them, although they dare not let on.

The district placed Emily and her cousin in the Rural Transition Center, a special program for village students held in a downtown storefront school. Emily studied English, mathematics, and social studies in a three-teacher school very similar to contemporary village high schools. The district hoped to transfer Emily to a large comprehensive high school for her sophomore year.

Emily did not do well at the school. "She could do much better," one teacher said. "There are times when she exhibits extreme industriousness and scholarship. But she doesn't seem interested or motivated—by me anyway." Her teachers did not realize just how homesick Emily was. They saw her as "sullen and moody much of the time."

Emily was also having problems at her boarding home. In the village she didn't need to tell her parents where she was going or when she would return. In the city, her boarding home parents insisted that they knew where she was at all times. Emily sometimes forgot. Soon she was transferred to another home.

Just after Thanksgiving Emily's second boarding home mother came into the program office distraught. She wanted to file a missing person's report. Emily had not come home the night before.

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*This *Review* is based on an abridged version of the full report, *Alaska's Small Rural High Schools: Are They Working?* The full-length report will be available in January 1986.

The Boarding Home Program coordinator finally located Emily at the Holiday Inn Motel. Emily told him that she had wanted to call her boarding home parents, but she couldn't figure out how to use the telephone in the motel room.

Despite her troubles, Emily wanted to stay in Anchorage. "I don't want to ruin my education," she said. Her cousin testified that Emily had never gotten into trouble at home.

Emily went home for Christmas and decided not to come back.

* * *

While we have changed all the identifying details, this is an actual case history of one village student who went away to high school in Anchorage in 1971. Although some students succeeded in the boarding home program, Emily's experience is not unusual.

In 1974 we followed the school careers of 105 village freshmen who entered three different types of boarding programs away from home: a boarding school, an urban boarding home program, and a rural boarding home program later replaced by a boarding school.[1] About *half* these students experienced *school-related* social and emotional problems.

Drop-out rates for these programs were high.[2] Almost 25 percent of the students left during their freshman year and others left during the summer. Only 46 percent made it through the first two years of any boarding program. While some of these boarding students left school altogether, most shuttled from program to program, discontented with each in turn.

These boarding programs presented students with a wide array of courses and teachers. Such educational opportunities did not, however, translate into substantial growth in achievement. During their *two years away* at boarding school, the village students we studied *gained less than one and a half years* in reading achievement and less than one year in language achievement.[3]

Not all boarding school situations produced high levels of social and emotional problems, high drop-out, and low achievement. In the early 1960s, for example, Mt. Edgecumbe graduated rural students who scored almost at grade level on standardized achievement tests.[4] Many later distinguished themselves as leaders in the Alaska Native Claims movement. Admission to Mt. Edgecumbe was, however, selective during this period. In the early 1960s, the freshmen were reading almost at grade level when they initially entered the school.

Similarly, rural students who were mature and had strong educational backgrounds succeeded in the Anchorage Boarding Home Program. When such students graduated from the boarding home program, they sometimes attended highly selective universities and, generally, did well in college.

In short, boarding programs worked only for a minority of rural students. In our earlier 1973 study of boarding programs, we used the following criteria for success: (1) the student stayed in the program, (2) the student did not develop severe or moderately severe school-related social and emotional problems, and (3) the student gained half a year or more in reading achievement for the full school year. *By these standards, only 23 percent of the 105 students that we followed succeeded during their freshman year.*

Staying Home in a Small Village High School: The Tobeluk Agreement of Settlement

Today a student like Emily goes to a small high school in her home village. The legal mandate for these village high schools resulted from a lawsuit filed by Alaska Legal Services on behalf of 126 rural communities.

According to the decree that settled the case, the state of Alaska must provide a secondary program in every community that wants one, even if the

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[1] Judith Kleinfeld, *A Long Way from Home: Effects of Public High Schools on Village Children Away from Home* (Fairbanks, Alaska: Center for Northern Educational Research and Institute of Social, Economic, and Government Research, 1973).

[2] The rates reported here are for the 105 students we followed for the 1973 study. In *A Long Way from Home*, we also reported drop-out rates for *all* village students who entered boarding programs in 1971 and 1972. Of the 1,724 students who entered boarding programs in 1971, 22 percent left during that year. Of the 1,561 students who entered the boarding programs in 1972, 34 percent left during the year. Most students did not drop out of school entirely but transferred from one program to the next. See *A Long Way From Home*, Appendix III, pp. 1-3.

[3] In the 1973 study, we gave the California Achievement Test to the 105 students we were following when they entered high school. We then gave them the same test at the end of their freshman and sophomore years, and measured change in grade level equivalents. We simply do not have the test data necessary to compare today's village high school students with the students who attended the boarding programs. Our point is, however, that the boarding schools did not produce a year's gain in achievement for each year in the program. See *A Long Way from Home*, Appendix IV, pp. 1-6.

[4] According to Mt. Edgecumbe records, graduating seniors in 1963 scored at the 11.2 grade level. Entering freshmen scored at the 8.2 grade level. In other words, over the four years of high school, students gained three grade levels.

community has only one high school student.[5]

In 1976, 110 of the 126 communities included in the original lawsuit chose to have a local high school. [6] Of the sixteen communities that originally declined the offer, ten later changed their minds.

By 1984, Alaska had spent nearly $143 million constructing high schools in small rural villages.[7] In some remote communities, the state spends more than $16,000 per year educating each high school student. [8]

Do Small High Schools Provide a High Quality Education?

Today a rural high school student like Emily attends a modern high school at home replete with personal computers, shop facilities, a gymnasium, and a library. Some have science labs, auto shops, computer labs, and similar amenities.

These schools have few students. Almost 60 percent of rural students attend a high school of forty students or less while nearly a quarter are in schools of twenty or less.

These schools usually have few teachers and can offer mostly a basic academic program. A high school of sixteen students, for example, may have only two certified teachers—one teaches English and social studies, while the other teaches math and science.

Because the school is small, these teachers may know each student well and understand the type of educational help they need. The teachers may have taken advantage of the flexibility small size offers to develop an educational approach tailored to the setting. They may have students research and write articles for a community newspaper as a way of teaching writing. They may have students learn to repair three-wheelers and outboard motors for community people as part of the vocational program. They may arrange a class trip to Anchorage so students learn about urban survival skills and career and college opportunities. They may make creative use of tutorials, peer teaching, and computer-assisted instruction.

On the other hand, these two teachers, while imaginative in taking advantage of the opportunities offered by a small school, may not have the academic background to teach such subjects as chemistry or world history. Moreover, the school may have no art or music program. The school might be able to field a basketball team but offer few other extracurricular activities.

Certainly, these small high schools are safe, supportive environments. Indeed, some critics would contend that they are *too* safe. Teachers in small rural high schools are generally very solicitous of their students, and social relations tend to be more familial than formal. Students grow up, go to school, and graduate with the same small group of students.

Are rural students in these small high schools really receiving quality education? Did the state of Alaska make a mistake in agreeing to establish a high school program in every community that wants one?

These are the questions worrying Native leaders who want to raise educational standards. These questions also worry rural college students who find themselves unprepared for either the academic or social demands of college. These same questions worry rural teachers who wonder if they should send high achieving students away to a boarding school, even though the loss of these talented students would hurt the education of those staying at home. Finally, these questions worry state policymakers who wonder if the educational benefits of these schools are worth the enormous costs.

STUDY GOALS AND METHODS

Study Objectives

To address these large issues we attempted to answer specific empirical questions:

- What educational programs do Alaska's small rural high schools offer?
- What educational problems do these schools face?
- What strategies have educators devised to capitalize on the educational opportunities offered by small high schools and cope with the problems posed by small size, cultural differences, and remoteness.

Definition of a Small Rural High School

This study defines a small rural high school as one with fewer than 100 students, in grades nine through twelve, that is located in a rural community of less than 1,000 residents.

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[5]The 1976 "Agreement of Settlement" in *Tobeluk v. Lind* (previously known as the Molly Hootch Case) has been incorporated into state law. The regulations state that a school district must provide a local secondary education if the local school committee wants one, if the community has an elementary school program, and if there is one or more children available to attend the secondary school (4 AAC 05.040).

[6]Personal communication from Stephen E. Cotton, formerly with Alaska Legal Services, July 20, 1984. Mr. Cotton has continued to monitor compliance with the *Tobeluk v. Lind* settlement agreement.

[7]Information provided by the Alaska Department of Education, *Tobeluk v. Lind* Consent Decree, Facility Construction Facility Report, undated (circa 1984).

[8]Information provided by the Alaska Department of Education, Management, Law, and Finance Division. Foundation Funding, Small High Schools in Alaska, Revised Foundation Reports, 1984.

By this definition, about 3,700 rural students attended 162 small Alaska high schools in 1984.[9]

Most small high schools are located in remote Native villages. About 25 percent, however, enroll mostly white or a mix of white and Native students.

Not all the small high schools were created as a result of the Tobeluk lawsuit. Indeed, 36 of the 162 high schools existed long before the settlement decree. These high schools came into existence because non-Native rural communities used their knowledge of the political system to get funding for local high schools many years before Native communities.

Study Methods

Since rural high schools in Alaska are located in a wide variety of communities, educational strategies that work in one type of community may be inappropriate in another. For this reason we gathered information on the educational programs of *all* 162 small rural high schools.

Due to the generous cooperation of rural communities and rural educators, we have enjoyed exceptionally high response rates—typically greater than 90 percent.

We used five basic sources of information:

1. Telephone interviews and mail-out surveys conducted with 97 percent of small high school principals.

We asked principals (who were usually teachers as well) for detailed information about their small high school program, about problems, and about the ways they were addressing these problems.

2. Site visits to thirty-two small high schools randomly selected by size and region.

During site visits, we interviewed community school committee members, high school students, and school staff. We observed classes and collected a variety of other information—students' writing samples, graduation requirements, etc.

3. Telephone interviews with over 90 percent of the school board presidents of rural districts with small high schools.

Working with the Alaska Association of School Boards, we interviewed rural school board presidents on the strengths and weaknesses of small high schools and innovative educational strategies their districts were using.

4. Collection of achievement test scores from 94 percent of small high schools.

While we are well aware of the many problems inherent in using standardized tests with students in small, culturally different schools, we collected these scores because they are the commonly accepted measure of school achievement.

5. In-depth studies of small high school issues by Native and non-Native educators.

To obtain a richer view of community attitudes toward village high schools and other issues, we worked with seven Native and three non-Native educators on special studies of the high school situation in their own communities.

Organization of Report

This report consists of three sections. In the first, we present the views of rural educators and residents on local high schools and boarding school options.

The second section documents the effects of the small high schools on graduation rates and presents profiles of four representative schools, three that are working well and one that is not. We also offer some general observations about successful rural high schools.

Finally, we turn to the problems with small high schools that educators and community members have identified and the strategies that some schools have developed to address these problems.

STUDY FINDINGS, PART I: Most Rural Communities and Rural Educators Want Both the Village High Schools and a Boarding School Option

Finding 1: Most rural communities and rural educators see significant advantages, as well as some disadvantages, to small rural high schools.

Rural residents and educators see significant advantages to small high schools. We summarize below the strong points they mentioned most frequently.

Advantages Seen in Small High Schools

1. *Children can grow up at home with their families.* Parents do not worry about whether their children, away at boarding schools, are unhappy or in trouble. Parents can follow the unfolding of their children's lives.

2. *In small high schools, children receive a great deal of individual help and attention from teachers*

[9] We identified 162 small high schools in 1984. The total number of high schools shifts slightly each year since the smallest schools may or may not exist in a particular year, depending on the number of students.

who know them well.

3. *In a small high school, children are participants, not spectators.* Almost everybody gets the chance to be on the basketball team or the yearbook staff. Rural children who might be on the sidelines in a large school occupy center stage in a small school.

4. *Small rural high schools offer students increased access to special educational opportunities, such as the chance to travel and lots of time on the computer.* About 90 percent of the schools offer travel outside rural Alaska. These schools average one computer for every four students.

5. *With the schools nearby, parents can exert considerable control over their children's education.* They can keep an eye on what is going on and take action informally as well as through formal membership on local or district boards.

6. *Local high schools enable communities to teach local cultural traditions, languages, and subsistence skills.* About 90 percent of Native-majority high schools offer instruction in cultural traditions, subsistence skills, and Native Land Claims issues. Over 60 percent have language programs designed to maintain Native languages.

7. *Local high schools provide such important community facilities and services as gymnasiums and workshops, spectator sports, newspapers, and community education programs.* Many small high schools serve as community centers and offer classes and recreation for adults as well as students. The schools also bring new jobs—on the average, three positions (such as teacher aide, secretary, or maintenance person)—in addition to professional teaching positions. They also stimulate such economic activities in the community as construction, transportation, and fuel oil sales.

Disadvantages Seen in Small High Schools

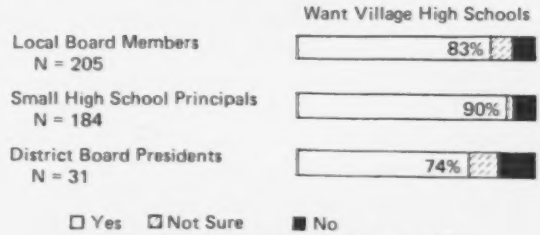
Rural residents and educators are well aware that small high schools have significant educational disadvantages. They emphasize that small high schools:

- *Offer little variety in courses and few advanced courses.*
- *Offer a limited number of extracurricular activities.*
- *Have few teachers.* The majority of teachers must instruct in subjects outside their specialization. If a teacher and a student have a personality conflict, neither has the space to get away from the other.
- *Do not provide enough exposure to the world outside the village and do not provide enough challenge and competition.*

Finding 2: Despite the problems, most people we interviewed want small high schools to remain the backbone of the rural secondary school system.

In each of the thirty-two communities we visited, local people support the village high school and do not want to lose it (Figure 1). Non-Native communities want their local high schools just as much as Native communities.

Figure 1
Most Rural Board Members and Principals Want Village High Schools

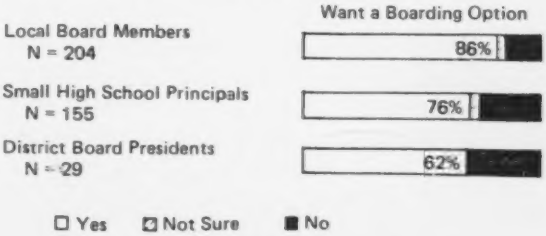


Source: ISER Small High School Survey, 1984.

Finding 3: Most people want a boarding option as an alternative to the small rural high school.

When we began this study, we thought people would either want the village high school or, after experience with these schools, would advocate returning to a boarding school system. That is not what we found. The majority of community people and principals we interviewed want village high schools. At the same time, they also felt that rural students should have the option of attending a boarding program (Figure 2).

Figure 2
Most Also Want a Boarding School Option



Source: ISER Small High School Survey, 1984.

Finding 4: Certain rural students need an alternative to the small high school.

According to rural educators and local people, the following kinds of students sometimes need an alternative to small high schools:

1. *Social referrals.* Occasionally, students have family or other nonacademic problems sufficiently serious to warrant leaving their communities to attend high school.

2. *Advanced students.* Students who are academically gifted cannot always be challenged sufficiently in small high schools. Students with a specific vocational interest may need special equipment or training not available in small high schools.

3. *Students who want more activities and social life.* Students who want to participate in athletics and other extracurricular activities or who want to socialize with a wider circle of peers often prefer a boarding school situation.

Finding 5: Some rural families make private arrangements to send their children to high school outside the community.

A few rural parents want their children to experience the emotional independence of living away from home or to have the educational opportunities offered by a larger high school. These parents typically arrange for their children to stay with relatives or family friends while they attend the larger school.

Where students are having problems in the family or community or need special programs, school districts sometimes arrange for them to go to school outside their community. These private arrangements are not widespread. About 20 percent of small high school principals said that some students in their communities are attending high school away from home.

Finding 6: While most people favor a boarding option, they are sharply divided on whether the state of Alaska should reopen Mt. Edgecumbe, a boarding school in southeast Alaska.

Advocates of reopening Mt. Edgecumbe as a statewide boarding school stress the need to provide rural students with an alternative to small high schools. They also stress Mt. Edgecumbe's historical importance in Native education and politics.

Opponents of Mt. Edgecumbe argue that reopening the school will be extremely expensive. Annual operating costs are currently estimated at $3.8 million for 175 students. In their view, the money could be better used to strengthen rural secondary education by other means, such as specialized itinerant teachers or summer college preparation programs on campus.

Reopening Mt. Edgecumbe, many fear, will drain money and talented students away from the small high schools and reduce the quality of education for the students who remain.

The State Board of Education decided to reopen Mt. Edgecumbe in 1985.

STUDY FINDINGS, PART II: Some Small High Schools Are Working—and Some Are Not

Finding 7: Small high schools have greatly increased high school graduation rates among rural students.

The most dramatic educational benefit of small local high schools is the increase in the number of rural students who graduate (Figure 3). The drop-out rate in Alaska's small rural high schools has now fallen to half the national average. The gap in graduation rates for Natives and non-Natives is closing, and the small high schools are responsible.

According to rural school board presidents and rural educators, village residents who have graduated from high school are more knowledgeable about schools, more interested in shaping the school program, and more likely to help their children do well in school. Rural Alaska communities with more high school graduates, we found, have higher achievement test scores.

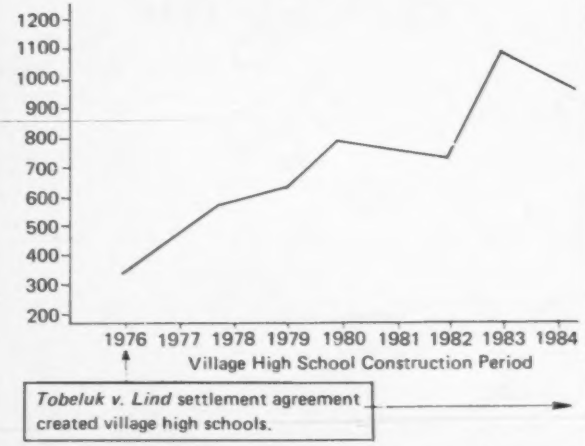
In short, the greatest educational impact of the small high schools may be in their long-term effect: raising achievement in subsequent generations of rural students.

Finding 8: Recent national research questions the quality of education available in large comprehensive high schools and demonstrates the value of instructional methods suited to small high schools.

The large comprehensive high school, long the standard in American education, has recently become

Figure 3

Village High Schools Have Increased the Number of Rural High School Graduates*



*This increase results from low drop-out rates and increased enrollment in rural high schools, rather than urban boarding programs away from home.

Source: Alaska Department of Education, 1984.

the target of considerable criticism.[10] With over 150 students each day, a teacher in a large school often cannot give students the individual attention necessary to develop their academic and intellectual skills. The tide of research, running for several decades in favor of large comprehensive high schools, has turned. Small schools characterized by a focused curriculum and more personal student-teacher relations appear to offer some distinct advantages.

In addition, the most effective approaches teachers can use to increase achievement test scores are particularly well suited to small high schools. Research has established tutorial instruction as the single most effective way to raise achievement test scores (Figure 4).[11] We frequently observed such one-to-one tutoring during our visits to small high schools.

Two of the most cost-effective supplemental methods available to teachers to increase achievement test scores—cross-age peer tutoring and computer-assisted instruction[12]—are also commonly used in Alaska's small high schools.

In short, the most effective ways to raise achievement test scores—teacher-directed tutorials, peer tutoring, and computer-assisted instruction—are common educational methods in small high schools.

Finding 9: Some small high schools offer a high quality educational program well adapted to local circumstances and community priorities. Others are having serious problems.

We judged a small high school as "working well" when it had the following five characteristics:

1. A staff that has adapted the instructional program to local priorities and conditions.
2. High attendance and few dropouts.
3. Students who spent most of the school day on demanding academic tasks.
4. Community members who express support for the staff and the instructional program

[10]See, for example, Theodore Sizer, *Horace's Compromise: The Dilemma of the American High School* (Boston: Houghton Mifflin, 1984); Mortimer Adler, *The Paideia Proposal: An Educational Manifesto* (New York: Macmillan, 1982); Ernest C. Boyer, *High School: A Report on Secondary Education in America* (New York: Harper & Row, 1983); Theodore Sizer, David K. Cohen, and Eleanor Farrar, *The Shopping Mall High School* (Boston: Houghton Mifflin, 1985).

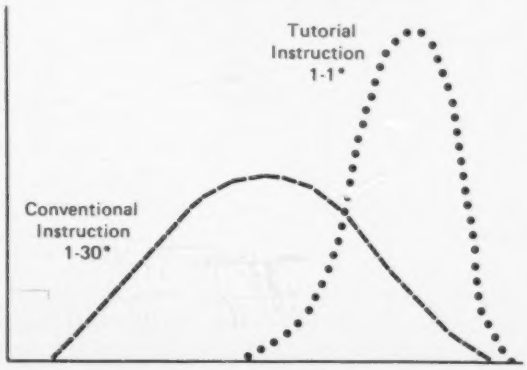
[11]Benjamin S. Bloom, "The 2-Sigma Problem: The Search for Methods of Group Instruction as Effective as One-to-One Tutoring," *Educational Researcher* (June/July 1984): 4-16.

[12]Henry M. Levin, Gene V. Glass, and Gail R. Meister, *Cost-Effectiveness of Four Educational Interventions* (Stanford University: Project Report No. 84-A11, 1984).

Figure 4

Tutorial Instruction Dramatically Increases Student Achievement

National Research Findings



*Teacher-student ratio.

Source: "The 2-Sigma Problem: The Search for Methods of Group Instruction as Effective as One-to-One Tutoring," Benjamin S. Bloom, *Educational Researcher*, June/July, 1984, pp. 4-16.

and feel welcome at the school.

5. Teachers who express enthusiasm for the school and see serious learning taking place.

Below we profile three schools that meet these criteria. Later we describe a school that is not working well. (Other examples of poor schools may be found in the final report.)

We do *not* offer these schools as models of what every high school should be. Other high schools that work just as well look quite different. There are many ways to make small high schools work. Each community must develop a small high school program adapted to its own circumstances and priorities.

Profiles of Schools That Are Working

Tundra High School
(15 students, 1 part-time and 2 full-time teachers)

In Tundra Village, Yupik is still the first language of the people. Poor English language skills are the major impediment to academic progress. Therefore, the principal decided to focus instruction on language development: "Everything is geared toward the teaching of English and the support of Yupik." If students maintain a strong first language, he believes, teaching them a second language becomes much easier.

In accord with community priorities, the curriculum emphasizes the local language and local subject matter. At the same time, instruction stresses higher-order inquiry and thinking skills.

One school project, for example, involved an inquiry into how housing in the village has evolved in recent times. Students first interviewed members of a construction crew who were building new housing in the village. These interviews stimulated students to interview local elders about what housing had been like before contact with Westerners. This, in turn, led to a field trip to the remains of a traditional sodhouse nearby. Using the materials collected from all these sources, the students produced bilingual newspaper articles and a video program which was shown to villagers.

The principal found that a conventional schedule—seven forty-five-minute periods per day—did not suit such activities. So he adopted a schedule that features ninety-five-minute blocks devoted to language arts, math, social studies, and science on alternating mornings.

The afternoon curriculum emphasizes practical subjects. Some students, who are taking Child Care, work in the local Head Start Program and read about child development. Other students, who are taking Subsistence Living, learn local hunting lore and hunting skills.

On Fridays, the school reverts to a conventional schedule so that students can be tested. To ensure that students master the skills and knowledge necessary for graduation, the principal matches the learning activities for each project with the district's learning objectives.

Tundra High resembles a small private progressive school. Teachers push students to draw relationships and step beyond the immediate to the abstract. The curriculum is rooted in the life of the community. Learning activities generate products and skills valued by students' parents. At the same time, the school sponsors travel programs to New York City and a student exchange with an Alaskan city. In this small high school, Yupik students experience life outside their isolated village.

Highlands High School
(9 students, 1 full- and 1 part-time teacher)

The staff and community at our second site made a very different decision about the emphasis of the school. The majority of the community have graduated from high school, and English is the everyday language. This community wants students prepared for college.

With college success the highest priority, the teacher and his wife (who teaches part-time) have devised a curriculum of rotating courses. All courses required for college are offered at least once during the students' four years. All students take American History during the same year, for example, but assignments are individualized to match each student's abilities.

Since Highlands High didn't have enough students to field a basketball team, the teachers organized an activity better suited to the small size of the school—a cross-country ski team. The team travels to ski meets at other rural and urban schools and once competed in New York. This travel exposes students to the world beyond the tiny settlement of Highlands.

Despite the small size of the school, achievement test scores are relatively high. Student scores range between the 21st and the 86th percentiles. Several graduates are currently enrolled in college.

Riverside High School
(47 students, 5 teachers)

Riverside, the site of an early church school, is a busy, sophisticated community. All five of the local advisory school board members attended some college. Riverside graduates have a history of college attendance and considerable college success. Parents expect their children to do well at school, and they

back up teachers who demand homework, research reports, and good classroom behavior.

Enrolling almost 50 students, Riverside looks much like a traditional high school. Students change classes. The day is divided into seven 45-minute periods. In most classes, the teachers instruct a dozen or more students.

Riverside emphasizes preparation for college. Students in English read Shakespearean plays and produce a term paper replete with footnotes and a bibliography. Extracurricular activities take a back seat to academics. Recently, when insufficient funds threatened teaching positions, the principal took the political risk of shifting funds out of athletic travel to maintain the academic program.

While the curriculum and organization of the school do not depart radically from the large high school model, the personal relationships teachers have with their students do. Teachers know the students and their families well. A student cannot hide in the crowd; there is no crowd in which to hide.

Profiles of Schools That Are Not Working

Not all the schools we visited displayed the energetic and innovative teachers, community-school partnerships, and focused educational programs described in the portraits above. Some schools were depressing places—plagued by class-cutting and attendance problems, staffed by apathetic teachers sending an unending march of worksheets across students' desks, assailed by hostile community members, and absorbed in district politics. Below, we describe such a school.

Fisherton High School
(7 students, 1 teacher)

A fishing village on a major river, Fisherton is plagued by alcoholism, unemployment, and a high school that pleases no one. Teachers find the community apathetic about the school and typically leave after one year. Community residents find the teachers distant and willing to let students get by with little or no work.

The frequent turnover in teachers has prevented the development of a systematic academic program. Students do worksheets and textbook assignments by themselves most of the school day. While not openly hostile, student-teacher interactions are curiously flat. Everyone just seems to be going through the motions of schooling.

The district office has contributed to the problem by hiring teachers whose first loyalty is owed to the district office, a pattern common throughout this particular district. The superintendent has carried this to the point of recruiting principals and principal-teachers who hail from his home state. While a vocal advocate of local control, the superintendent allows teachers and their advisory school committees little latitude on critical educational issues.

The Negative Culture of Schools That Are Not Working

Why do situations such as that in Fisherton develop? Students and parents blame the teachers who "don't care, just come for the money, and have low expectations." Teachers blame the students, or more often, the parents, who "don't care about their kids, don't get them to bed on time, and don't encourage them to do well in school."

Such finger-pointing is not an explanation. For different reasons, a negative culture develops in these schools and becomes self-perpetuating. New teachers meet suspicion or even hostility from the community. Experienced teachers often avoid communities that the teacher network has labeled "difficult." Students tease and test teachers, who quickly lose both their commitment and confidence. A committed, enterprising staff working with the community could change this culture—but not easily.

Finding 10: The size of the high school *does not* determine the quality of the student's educational experience. Other school characteristics are far more important.

Our fieldwork showed that some very small schools, even those with fewer than ten students, provide a high quality education, while some much larger schools, those with 40 to 100 students, do not.

Achievement test scores tell the same story. The larger rural high schools, enrolling 40 to 100 students, show a distribution of test scores no different from those serving smaller numbers of students.

It is not size but other conditions that distinguish the small high schools that are working from those that are in trouble. In small high schools that are working well:

1. **The community and school have forged an educational partnership and support each other.**
2. **The school has developed some clear focus that unifies and gives purpose to the educational program. This focus (or theme) might be language development, college preparation, cultural maintenance, or leadership development.**

3. **The school staff consists of enterprising educators who are not hide-bound to a single image of what a high school looks like and who can design a program fitted to a particular situation.**
4. **The school staff has the broad intellectual range and broad interests (such as dog mushing, taxidermy, writing, art, music, house building, flying a plane) that add variation to the program.**
5. **The school is in a district where the central office administrators encourage local professionals to consult with the community and to fit the instructional program to community priorities.**

STUDY FINDINGS, PART III:
Problems Exist . . . But So Do Solutions

Small rural high schools in Alaska face difficult problems due to the sheer weight of expectations placed on them. Schools are expected to offer sound academic programs *and* recreation for the students *and* community services for adults. Schools are expected to prepare students for wage employment, for college, for the world beyond the community, *and*, at the same time, inculcate traditional skills and values.

We discuss below the educational problems that rural residents and educators see in small high schools. We also describe the strategies some small high schools are using to solve these problems.

Problem Area 1: Limited Numbers of Teachers, Courses, and Extracurricular Activities

The Issue

While Alaska's small high schools offer a basic academic curriculum and some activities, many community people want more course variety and more extracurricular activities. Fewer than half the schools, for example, offer separate courses in art and music or such advanced courses as physics and trigonometry.

About half the teachers in small high schools are teaching outside their fields. Some have a broad education and can teach such subjects well. Others cannot. Rural college students, who find themselves unprepared for college level work, are especially concerned when high school teachers "teach subjects they don't know about."

Strategies for Increasing Course and Teacher Variety

Contrary to those who advocate a high technology solution to the problem of limited curriculum in small schools, we found that schools tend to address this problem with people-intensive rather than technology-intensive solutions. We did not find extensive use of such existing technologies as instructional television and audioconferencing. Schools do use microcomputers a great deal, most often for word-processing and drill, rather than as a means to deliver coursework without an on-site instructor.

While this does not preclude the wider use of communications technology in the future, a great deal more thought needs to be given to integrating technology with instructional practices. Assuming that teachers will use available technology has been the downfall of more than one innovative curriculum program.[13]

Small high schools have developed many types of people-intensive and experience-intensive strategies to expand their curriculum. In Exhibit A, we list a few examples.

EXHIBIT A
STRATEGIES TO INCREASE COURSE AND TEACHER VARIETY
(A Few Examples)

- **Innovative staffing.** Some schools use part-time instructors from the local community to teach both academic subjects and local skills. Elementary teachers with academic specialties teach their subject at the high school level in other schools. Other staffing innovations include use of itinerant teachers, artists-in-residence, and specialists from urban areas employed on short contracts.
- **Curriculum and organizational innovations,** such as rotation of courses, community-based projects, block scheduling, and shift scheduling.
- **Summer camps** and other summer programs.
- **Link-ups with other institutions,** such as university programs, Native organizations, larger rural schools, and urban partner schools.
- **Travel programs** to other rural communities, urban areas, and places outside Alaska.

[13] See Paul Berman and Milbrey W. McLaughlin, *Federal Programs Supporting Educational Change, Vol. III: Implementing and Sustaining Innovations.* Report to the U.S. Office of Education (Santa Monica, Calif.: Rand Corporation, 1978).

Problem Area 2: Providing Vocational Education

The Issue

Vocational education, in the eyes of both community people and rural educators, is the *single weakest area* of small high schools. Difficulties in providing effective vocational programs in small high schools extend beyond the lack of specialized vocational education teachers and essential equipment. Even figuring out what vocational education should offer students is problematic.

No consensus exists on the objectives of "vocational programs," either at a national level or in rural Alaska. Indeed, many national reports argue that the best vocational education is an academic education; specific job-training should be postponed to post-secondary training. [14]

When people talk about the "vocational education problem," they do not adequately distinguish between types of vocational programs; different programs can have quite different purposes:

Purpose of Vocational Program	Can a Small High School Do This?
Provide work-experience and career exploration.	Yes. Usually a school can make arrangements in the community or outside it.
Teach practical local skills, such as small engine or diesel repair.	Yes. Small high schools, which can draw on local crafts people, are especially well-suited to teaching these skills.
Prepare students for specific jobs through specialized training programs.	Not usually. Exceptions are office occupations or jobs where local practical skills, like small engine repair, are in reality entry-level skills.

Strategies for Providing Vocational Education

As shown in Exhibit B, small high schools can provide vocational education through a variety of strategies.

[14] See, for example, the discussion in Boyer, *High School: A Report on Secondary Education in America*, pp. 121-130.

EXHIBIT B
STRATEGIES FOR PROVIDING VOCATIONAL EDUCATION
(A Few Examples)

- **Work experience programs** in which students work at the school, at supervised jobs in the community, in Native corporations during the summer, or in urban work sites through the Rural Student Vocational Program.
- **Starting a small business enterprise in the community.** Students learn to produce and price a product, order raw materials and supplies, and do the bookkeeping. Students in small high schools have started such enterprises as a student store, a storyknife business, a snack bar, and a bakery.
- **Setting up a repair shop** where students work on three-wheelers, outboard motors, and other equipment for community residents.
- **Sending students to a central vocational facility** for two-week courses.
- **Using itinerant vocational education instructors** who stay at the school for a few weeks at a time.
- **Using part-time local people** to teach fur-sewing, kuspuk making, boat and engine repair, and other practical skills.

Problem Area 3: College Preparation

The Issue

Neither the small rural high schools nor the boarding schools that preceded them have succeeded in preparing students well for college. Most rural students who enroll in college do not graduate.

Those most dissatisfied with the small high schools are rural college students who find that their secondary education is inadequate preparation for college.

Yet, none of our evidence demonstrates that small high schools prepare students for college any better or any worse than did the boarding schools. Drop-out statistics from the University of Alaska show students from village high schools doing about as well as students from larger rural high schools or from boarding schools.

Most people, including rural college students, believe high college drop-out rates result from two problems. First, many rural students feel their high school teachers have not adequately taught them the

academic skills needed for college success—for example, taking notes in a lecture, writing a research paper, or reading and comprehending college material.

Second, many rural students have difficulty adjusting to the stress and the impersonal relationships they encounter at college. Most do not flunk out of college; they leave voluntarily because they do not feel comfortable in the college setting.

Strategies to Prepare Students for College

College Preparation Classes. Some high schools have established special classes to get students ready for college. These classes teach students explicitly how to study, write research papers, take notes, or read and understand complicated technical material.

The Rural Alaska Honors Institute. This program brings academically talented juniors from small high schools to the Fairbanks campus of the University of Alaska (UAF). In addition to improving their academic skills, students are immersed in experiences they will face in university courses—discussing their ideas before a group or dealing with the pressure of a term paper and an exam on the same day. Of the thirteen students who enrolled at UAF after the program's first year, all completed their first semester and twelve returned for the second semester.

Problem Area 4: Low Achievement Test Scores

The Issue

Most rural high school students score far below the national average on standardized tests (Figure 5).

Small high schools did *not* create this problem. Rural students also scored very poorly on standardized tests when they went away to boarding schools. In 1974, for example, when Mt. Edgecumbe had replaced its highly selective enrollment policy of the 1950s and 60s with an open admission policy, high school seniors graduated with achievement test scores below the ninth grade level.

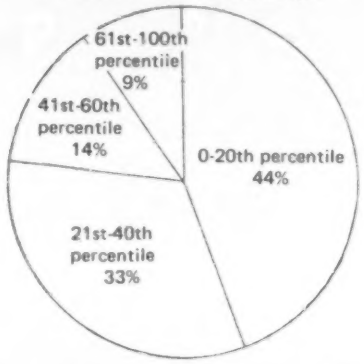
A number of factors that have nothing to do with instruction in school combine to keep the achievement test scores of many rural Native students low: language background, the urban context of many test items, and social traditions that do not emphasize academic skills.

We do *not* know what effects small high schools have had on rural students' achievement test scores—whether positive, negative, or neutral. No comparative statistics are available. Those who argue that the agreement of settlement in *Tobeluk v. Lind* has "produced the world's most expensive high schools and the most poorly educated high school students"[15] should be aware that current data support neither this nor any other definitive conclusions.

Figure 5

Students in Rural High Schools Have Low Achievement Test Scores

Percentage of Entire 9th-12th Grades at Different Percentile Rankings*



Total Number of Grades Represented: 522

*Please keep in mind that these figures represent average achievement test scores for the whole grade, not scores for individual students.

Source: ISER Small High School Survey, 1984.

Strategies to Raise Achievement Test Scores

Many rural school districts are devoting considerable effort to raising standardized test scores. Such efforts usually originate in the central office. Various districts have:

- Offered monetary incentives to teachers who raise test scores.
- Examined the fit between their curriculum and test items.
- Taught students test-taking skills.
- Monitored weekly lesson plans to insure that teaching reflects test content.

Many teachers, however, tend to be unenthusiastic about what they see as an overemphasis on test scores. Others endorse this priority and develop community support for improving test scores. In one community, for example, the principal teacher persuaded parents to postpone the annual spring festivity until after the tests, send students to bed

[15] Thelma Buchholdt, Proposed Interim work of the HESS Committee (Alaska State House of Representatives), memorandum dated April 10, 1979.

early before the tests, and even come to the school to cook a special breakfast on the day of testing.

The success of these various strategies is difficult to determine. Using yearly changes in test scores to measure changes in student learning in small schools is problematic at best—a fact some educators fail to appreciate. In a class of five students, the absence of one bright student, for example, can lower the class average dramatically.

To obtain a better measure of change in student learning, some schools are using criterion-referenced tests to more accurately gauge the effectiveness of instruction. These tests are designed to measure student learning of the specific knowledge and skills taught in the school curriculum rather than the more general knowledge and skills measured by standardized achievement tests.

Problem Area 5: Helping Rural Students Become Competent in the World Outside the Village

The Issue

Residents of contemporary rural Alaska need the skills and confidence to handle urban life, whether they choose to remain in their home communities or live in urban areas. Rural adults frequently travel to towns and cities to work, receive training, attend meetings, go to school, enter the hospital, or take a vacation.

In remote, culturally different communities, educators worry about their students' social isolation. Unfamiliarity with such mechanics of urban life as pedestrian and stop lights, pay telephones, or the bus system is but one aspect of this concern. More importantly, students are unprepared for the social organization of urban life. They are not equipped to deal with such things as impersonal interactions with other people and the loneliness of facing the stresses of daily life without the immediate support of family and friends.

Strategies to Teach Students About the Outside World

Most small high schools offer travel programs to increase students' competence in the outside world. Almost 90 percent of the small high schools sponsor student trips to Alaska cities, and 40 percent send students to other states or foreign countries. In fact, students in some schools travel so often that many teachers worry that travel is undermining the academic program.

Is this travel educationally worthwhile? One rural district carefully evaluated the various types of travel it sponsored: athletic trips to other rural schools, class trips to cities, and individual student trips through state programs.[16] The district concluded that the *most educationally effective form of travel is the class trip*, because teachers can plan academic activities for the whole class around them. Such trips increase rural students' self-confidence, their concepts and skills, their interest in visiting new places, and their understanding of how to behave in unfamiliar settings.

Problem Area 6: The Transition to Adulthood

The Issue

During high school, rural students receive a great deal of nurturing and support from teachers who know them well. After high school, students are suddenly on their own. As one experienced rural educator said:

> This generation is floating. Students in these small high schools don't have any clear idea of how they are going to make a living. They have no vision of the future. They didn't need one a generation ago. But now people in their twenties and thirties are just sitting at home, bored to tears. They don't like themselves.

Transition to adulthood is a difficult period for *all* students, urban and rural. Urban students, however, are more likely to have certain advantages—an uncle or family friend who can get them a job in a friend's construction business, a parent who knows how to get them out of mischievous trouble, or an established work record from weekend or after-school jobs. Rural students rarely have such resources.

Strategies to Help Rural Students Through the Transition to Adulthood

One Alaska school district has developed an exceptionally promising approach to helping rural students make the transition to adulthood: the *postsecondary counselor*. This counselor, located in the district office, takes responsibility for students when they are about to graduate. The counselor not only helps them get into postsecondary programs but also stays in touch with them and helps them through rough spots. For example, the counselor keeps duplicates of important documents that may get lost. He takes midnight telephone calls announcing crises and shows students how to negotiate the urban, institutional world.

Of the 154 graduates from this district who had enrolled in postsecondary programs, only 15 percent dropped out.

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[16] Virginia Juettner, *The Iditarod Area School District Program Evaluation 1979-1980* (McGrath, 1980).

CONCLUSION

Most of the community people and rural school board presidents we interviewed had personal experience with both the former boarding school system and the current village high schools. They support the village high schools and do not want to lose them.

At the same time, they want choice—a boarding option. Some students need to leave the community for personal reasons, while others need an advanced program not offered by their particular high school.

Rural educators agree. They also favor small schools *and* a boarding option. In their view, small high schools can provide a high quality education. Many are in fact doing it. These schools have enterprising teachers who have forged an educational partnership with the community. Using tutorials, travel programs, computers, community projects, business enterprises, etc., they offer a high quality education fitted to the situation.

These educators do not model their program on the comprehensive high school. Rather than fighting smallness, they use it to advantage.

Not all small high schools, however, offer students good educational experiences. Some teachers have organized a program totally dependent on textbooks and worksheets. Some schools are caught in a quagmire of low expectations and low effort on the part of both the teachers and the community. No one is happy with the situation, but no one has managed to pull the school out of it.

No quick fix exists for these problems. Low achievement test scores, low rates of college success, and unsuccessful transitions to adulthood—all of these problems were with us in the boarding school era and all are still with us in the village high school era.

Yet, one serious problem is no longer with us—high drop-out rates among rural secondary students. The graduation rates of rural high school students now exceed the national average.

Graduation from high school is becoming the new norm in rural communities—an achievement of considerable magnitude not to be lightly dismissed. Research conducted over many decades and across many cultures shows that more years of formal education profoundly influences people's knowledge, values, world view, and child-rearing practices.[17]

Rural communities with high numbers of high school graduates have higher achievement test scores than do villages with lower educational levels. Rural educators and school board presidents alike point out that parents who are high school graduates take a more active interest in their children's education. The greatest impact of the small high schools, we suspect, will be on the next generation—the children of the many rural students who are now graduating from high school.

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[17]See, for example, Alex Inkeles and David H. Smith, *Becoming Modern: Individual Change in Six Developing Countries* (Cambridge, Mass.: Harvard University Press, 1974).

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ALASKA
REVIEW OF SOCIAL AND ECONOMIC CONDITIONS

University of Alaska, Anchorage, Institute of Social and Economic Research March 1986, Vol. XXIII, No. 1

Changes in Rural Alaska Settlement Patterns

As falling oil prices reduce government revenues needed to support services and facilities throughout Alaska, it is important to understand how migration and natural population growth are changing the size and number of Alaska settlements. Of particular concern is the extent of migration from Alaska's smallest settlements to its regional centers and urban areas.

To help determine the extent and patterns of migration in the state, this *ARSEC* examines changes in Alaska settlement trends over the last thirty-five years, focusing in particular on rural population changes. Using census and vital statistics data, it shows that a general movement from small rural places to larger places in the nineteen fifties and sixties slowed and in some cases even reversed in the seventies and early eighties. The report also shows that the combined flow of Natives and non-Natives into rural Alaska during the seventies and early eighties resulted in most small rural places increasing their populations.

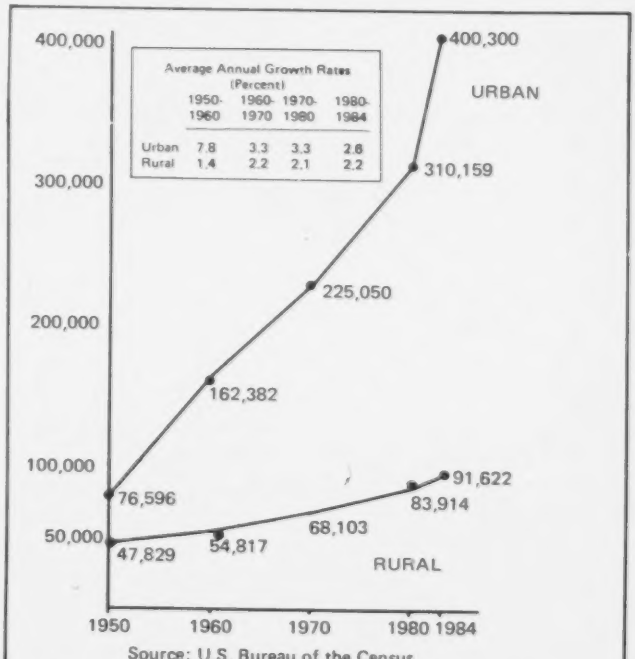
While the authors do not attempt to offer a comprehensive explanation for changes in the migration patterns, they do offer some evidence that establishing secondary school programs in Alaska's smallest places played some part in the observed changes.

Comparing Urban and Rural Growth

The most obvious change in Alaska settlement patterns since 1950 has been the phenomenal growth of urban Alaska (see Figure 1). For the purposes of this article, we defined as urban Alaska the Anchorage Municipality, the boroughs of Fairbanks, Mat-Su, Kenai, Juneau, Ketchikan, and Sitka. Since these jurisdictions did not exist throughout the analysis period, we had to estimate population, births and deaths on the basis of reports for the closest matching census districts and/or groups of places. Over the entire 34-year period, the population of urban Alaska, including the major military installations, increased by an estimated 423 percent. This represents an annual average growth rate of 5 percent per year. In comparison, the growth of rural Alaska, the entire area outside of urban Alaska,[1] has been considerably slower.

During the same period that the population of

[1]This excludes the population enumerated at military sites, including Adak, Shemya, Kodiak Station, Fort Greely, and a number of smaller installations.



Source: U.S. Bureau of the Census.

Figure 1. Population Growth in Urban and Rural Alaska

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Donald O'Dowd–President, University of Alaska
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Institute Editor: Ronald Crowe
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Main Institute Office:
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FEATURE

Jack Kruse and Karen Foster Changes in Rural Alaska Settlement Patterns

Jack Kruse is a professor of public affairs, and Karen Foster is a research associate. Both are with the Institute of Social and Economic Research in Anchorage.

urban Alaska more than quadrupled, the state's rural population less than doubled. Over the last 35 years, the population of rural Alaska has increased at an average annual rate of only 1.9 percent.

Components of Rural Population Change

Changes in the quality and quantity of census and vital statistics data over the last three decades make it impossible to apply a uniform method of analysis to track the components of rural population change. We applied the best methods that could be supported with the data available in each decade.

During most of the 1950s, births and deaths in Alaska were recorded only by place of occurrence. Thus, children born of rural residents who temporarily moved to an urban area to obtain medical care were reported as an increase in the urban population. Use of these data would overstate the rate of natural increase in urban Alaska (i.e. excess in births over deaths) and greatly understate the rate of natural increase in rural Alaska. It is therefore not possible to directly estimate the natural increase in rural and urban populations during the 1950s. We can, however, estimate natural population increases by applying either statewide rates of natural increase or rates of natural increase among Alaska Natives. [2]

While neither the statewide nor Native rates of natural increase directly apply to rural Alaska, we believe it is safe to assume that the rural rate of natural increase during the 1950s fell between the two. Applying the Native rates of natural increase over the 1950s to the 1950 rural population estimate of 47,829, we estimate that the rural population would have increased by about 18,000 had there been no net migration (see Table 1). In fact, however, the rural population increased by only 6,988 (excluding the populations of remote military sites). These figures suggest a net out-migration of approximately 11,000 people from rural Alaska between 1950 and 1960.

However, this estimate is probably high since non-Native rates of natural increase were lower than Native rates of natural increase in all but the first years of the 1950s. A low estimate can be made by applying the statewide estimates of natural increase to the 1950 rural population. This approach yields an estimated natural increase in rural Alaska of approximately 15,000. Again calculating the difference between natural increase and actual population increase, we estimate that the net out-migration from rural Alaska during the 1950s was at least 7,000.

We can be more confident about the causes of population changes during the 1960s. Over the course of the decade, 70,925 people were born and 13,250 people died in Alaska. By comparing the natural

[2] Native women made up about 60 percent of the female population of rural Alaska as defined in this article.

increase of 57,675 with the actual population increase of 75,954, we can conclude that the net in-migration to Alaska was about 18,400. During the same period, the population of urban Alaska experienced a natural increase of 44,091 and a total population increase of 62,668. Thus, the net in-migration to urban Alaska during the 1960s was about 18,600. The fact that the estimated number of in-migrants to urban Alaska approximately equalled the number of in-migrants to Alaska as a whole is merely a coincidence, since urban in-migrants include both residents who are new to the state and rural residents who moved to urban areas.

Since we are primarily interested in understanding the relationship between changes in rural and urban settlement patterns in Alaska, we would like to be able to distinguish between urban in-migrants from rural Alaska and urban in-migrants from outside the state. We have already estimated that the net in-migration for the state as a whole during the 1960s totalled about 18,400. To estimate the proportion of in-migrants who settled in urban Alaska, we reviewed data from the 1960 and 1970 decennial censuses and calculated the number of persons 5 years old or older in each census who reported that they had lived in another state 5 years previously. After making the same calculations for urban residents alone, we could estimate the percentages of in-migrants from outside Alaska who were living in urban Alaska in 1960 and 70. Our calculations yielded 82 percent in both cases. Assuming that this percentage was applicable throughout the 1960s, the estimated number of people moving to urban Alaska from outside the state was 82 percent of 18,400, or about 15,100.

Having already estimated the net number of in-migrants to urban Alaska from rural areas and outside the state at 18,600, we can infer that 18,600 minus 15,100 (our estimate of the net number of urban in-migrants from outside Alaska), or 3,500, represents the net migration of people from rural to urban Alaska between 1960 and 1970. Thus, 21 percent of the potential increase in Alaska's rural population in the 1960s was lost to urban Alaska. This migration from rural to urban Alaska is evidenced by the fact that the percentage of Alaska Natives living in Anchorage, Fairbanks, Juneau, Ketchikan, and Sitka grew from less than 5 percent in 1950 to 13 percent in 1960 and 21 percent in 1970.

While we have already estimated the net migration between rural and urban Alaska, we have not calculated the net migration between rural Alaska and outside the state. The federal government reported 18,182 births and 4,598 deaths among Alaska's rural population during the 1960s, for a total natural increase of 13,584. The observed increase in the rural population was 13,286 (excluding rural military installations). The net out-migration from rural Alaska totaled less than 200 people during the 1960s. Since we estimated that the net out-migration from rural to urban Alaska was about 3,500, however, we can conclude that there was a net *in*-migration to rural Alaska of about 3,300 from outside the state, most of whom were non-Native. In both 1950 and 1960, 68 percent of the population living outside of Anchorage, Fairbanks, Juneau, Ketchikan, or Sitka (i.e., rural Alaska plus the Mat-Su and Kenai boroughs) was Native. In 1970, however, the Native population comprised only 59 percent of the population of this area.

We have seen so far that rural Alaska experienced a substantial net loss in population during the 1950s. During the 1960s, the net out-migration from rural Alaska as a whole was negligible, but only because a continuing out-migration of rural residents was equalled by an in-migration of people from outside Alaska.

Table 1

Components of Population Change in Rural Alaska

	1950-60	1960-70	1970-80
Natural Increase	15,000-18,000	13,584	12,084
Net In- (Out-) Migration	(7,000-11,000)	(200)	3,700
Net Flow Rural-to-Urban	NA	3,500	4,327
Net Flow Out-of-State to Rural	NA	3,300	8,027

Sources: Federal Vital Statistics, U.S. Bureau of the Census, and Alaska Department of Labor.

Turning now to the 1970s, we see an accentuation of the trend observed in the 60s. A total of 16,463 births and 4,379 deaths were recorded in rural Alaska during the 1970s for a total natural increase of 12,084. During the same period, the rural population grew by 15,811. Thus, an apparent net *in*-migration of approximately 3,700 occurred in rural Alaska in the 1970s. Looking further at available data, it appears that, as in the 1960s, a continued out-migration of rural residents to urban Alaska was accompanied by an in-migration of people from out of state. The difference between the two decades is that the in-migration from outside to rural Alaska in the 1970s far surpassed the out-migration of rural residents to urban areas.

Between 1970 and 1980, the state experienced a natural increase of 56,175 and a total estimated net in-migration of 44,745. Still assuming that 82 percent of these in-migrants settled in urban Alaska, an

assumption supported by 1980 census figures, we would expect that 36,691 of the net in-migration to urban Alaska during the decade was attributable to new residents from out of state. By subtracting the observed natural increase in urban Alaska of 44,091 from the actual population increase of 85,109, we see that urban Alaska experienced a total net in-migration of 41,018. Thus 41,018 minus 36,691 (4,327) is the estimated net out-migration of rural residents to urban Alaska during the 1970s. Since rural Alaska experienced a total net in-migration of about 3,700, the estimated net in-migration to rural Alaska of people from out of state is 3,700 plus 4,327, or 8,054. Indicative of this trend is the fact that the proportion of the total rural population comprised of Native residents dropped from 59 percent in 1970 to 56 percent in 1980.

Table 1 summarizes the overall pattern of rural Alaska migration between 1950 and 1980. As a whole, rural Alaska experienced a substantial net out-migration during the fifties, virtually no net change in population due to migration during the sixties, and a significant net in-migration during the seventies, a trend we expect is continuing today. Underlying these changes appear to be two migration flows, one of rural residents to urban Alaska, and one from outside the state to rural Alaska.

Regional Differences

At this point we should enter the first of several important caveats to the general trends in population change described above. Not all regions of rural Alaska have experienced the same magnitudes of population change. To provide a basis for identifying regional differences, we constructed four rural regions: Southeast (excluding the Juneau, Ketchikan, and Sitka boroughs), Southwest, Copper River/ Wrangell, and North/West/Interior (see Figure 2). During the 1950s, the average annual rate of population increase in rural Alaska as a whole was 1.4 percent per year. Rates of population change among the identified rural Alaska regions ranged from an average loss in population of 0.9 percent per year in the Southwest to an average gain in population of 3 percent per year in the Copper River/ Wrangell region (see Table 2).

The reported loss in population in Southwest Alaska may in part reflect changes in the military population that we were not able to identify with available information. The populations of both Kodiak and Unalaska grew significantly during the fifties, although the population of Dillingham was actually reported to decline.

Effects of military activity may also account for some of the change in the Copper River/Wrangell region population. Fort Greely population grew from 280 in 1950 (it was Big Delta Air Force Base then) to 1,536 in 1960. Although we excluded the Fort Greely population itself from the 1950 and 1960 regional population estimates, attendant off-base population growth may have occurred.

Aside from the effects of military activity, regional differences in population change during the 1950s may reflect differences in the regional rates of natural increase. We suspect that the rate of natural increase during the fifties was highest in the region made up of North, West, and Interior Alaska (see Figure 2) where Natives comprise the highest proportion of the population. This region experienced an average growth in population of 2.4 percent per year between 1950 and 1960, and we think that the actual rate of natural increase more closely approximated the statewide decade average rate of natural increase among Natives of 3.3 percent per year. Thus, the region probably experienced substantial net out-migration. While the rate of natural increase in rural southeast Alaska was likely lower due to a larger non-Native population, the reported annual average population increase of 0.8 percent indicated net out-migration as well.

During the 1960s, the population of rural Alaska averaged a 2.2 percent increase per year. As we reported earlier, the increase in the rate of population growth in rural Alaska in the sixties appeared primarily attributable to a flow of people into rural Alaska from outside the state. Looking at population changes during the sixties on a regional basis makes it appear that there was less regional variation in growth rates during the 1960s than during the preceding decade. This may suggest that the in-migration of out-of-state residents to rural Alaska was evenly spread across rural regions. On the other hand, differences in regional rates of natural increase make it difficult to test this idea, and available census data on the number of in-migrants to each region include many military personnel whom we would like to exclude from the analysis. It is therefore necessary to limit our conclusions to say only that a combination of factors led to a convergence of rural regional growth rates in the sixties.

The population of rural Alaska increased at an average rate of 2.1 percent per year in the 1970s. We have already concluded that rural Alaska as a whole experienced a net in-migration of some 3,700 people during the decade. Looking at population growth on a regional basis, however, it appears that the only region apparently experiencing net in-migration was the Copper River/Wrangell region (see Table 2). The relatively rapid growth of this region is not surprising, given its location on the Alaska road system, the presence of the trans-Alaska pipeline in the region (Valdez alone experienced an increase of 2,074), and the state's efforts to promote agricultural development in the northern part of the region.

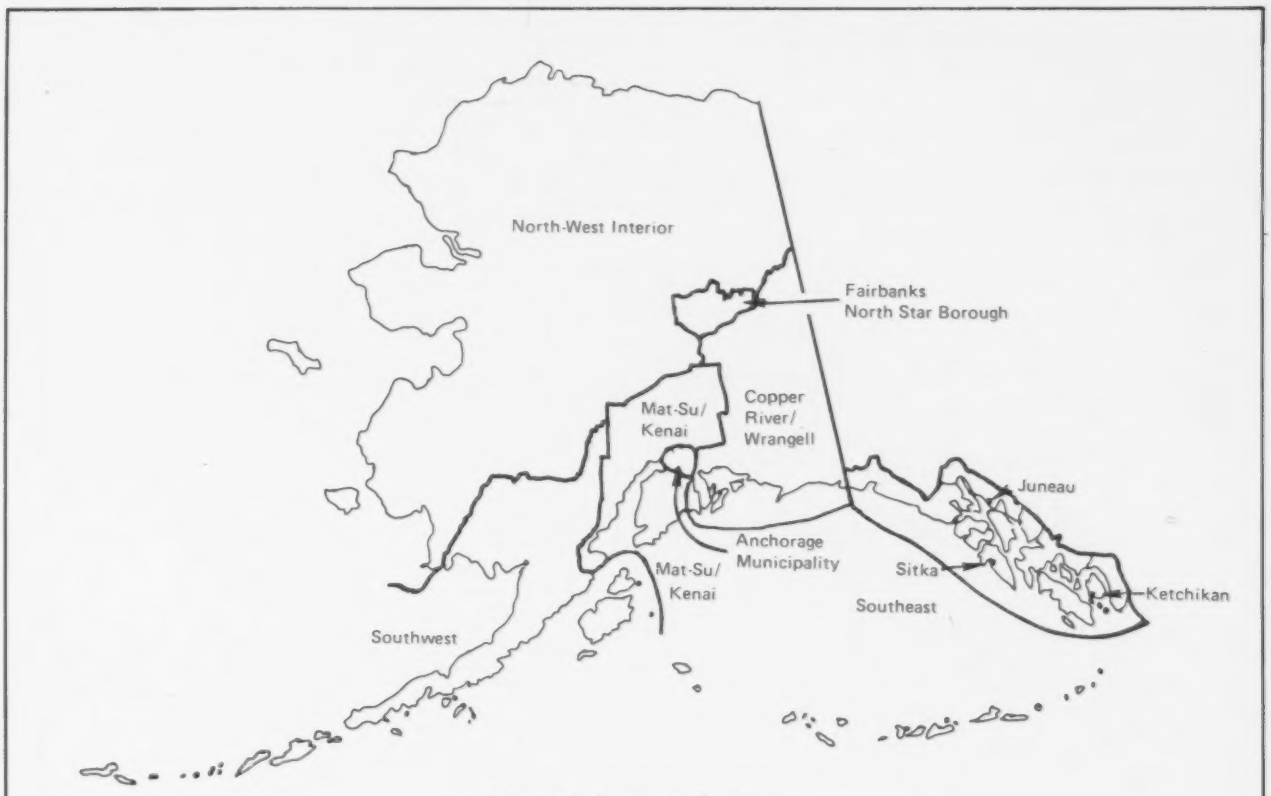

Figure 2. Analysis Regions

Our analysis thus far suggests that rural Alaska as a whole and most regions within rural Alaska have lost residents to urban Alaska throughout the last 35 years. During the sixties and the seventies, however, this loss in residents was partly, or in the case of the Copper River/Wrangell region in the seventies, wholly, offset by an apparent in-migration of non-Natives to rural Alaska.

Rural Migration Patterns by Size of Community

We next address whether rural Alaska itself has experienced an internal migration from smaller to larger places, particularly those communities seen as regional transportation and service centers. While we might expect such a trend to accompany a general rural to urban migration, it does not have to. In fact, we will see that in the seventies it did not. To track the fate of the state's villages, it is necessary to examine population trends by place as well as by region.

Comparisons of population data from places in Alaska over time present some difficult analytical problems. Although the U.S. Bureau of the Census goes to greater lengths to identify small places in Alaska than it does anywhere else, it still does not separately report population counts for settlements with less than 25 residents. It is thus impossible to track the growth or decline of some of Alaska's smallest places at the beginning or end of their existence. The Census Bureau has also used different names for some Alaska villages. In constructing a place data file, we took these name changes into account and attempted to match census figures for villages occupied by the same people, even if the location of the village changed. Because we are primarily interested in civilian settlement patterns, we eliminated remote military sites from the analysis file. Our final rural Alaska analysis file included 281 places with populations of at least 25 or more in at least one census count (see Appendix A). The reader should keep in mind that the definition of rural applied in this paper excludes all settlements located in the Anchorage Municipality (e.g. Girdwood) and the Fairbanks, Mat-Su, Kenai, Juneau, Ketchikan,

Table 2

Regional Differences in Population Growth

A. Population

	1950	1960	1970	1980	1984
Rural Alaska*					
North, West, & Interior	21,497	27,233	32,438	38,686	39,982
Southwest	12,189	11,089	15,305	17,692	22,175
Copper River/Wrangell	4,447	5,975	7,465	12,389	13,265
Southeast	9,696	10,520	12,895	15,147	16,200
Total Rural	47,829	54,817	68,103	83,914	91,622
Urban Alaska					
Anchorage Municipality	31,487	82,833	126,385	174,431	226,700
Fairbanks North Star Borough	18,369	40,425	45,864	53,983	62,300
Mat-Su, Kenai Boroughs	8,233	14,241	23,095	43,098	67,300
Juneau, Ketchikan, Sitka Boroughs	18,507	24,883	29,706	38,647	44,000
Total Urban	76,596	162,382	225,050	310,159	400,300
Statewide*	128,643	217,054	293,153	394,073	

B. Average Annual Percent Growth

	1950-60	1960-70	1970-80	1980-84
Rural Alaska				
North, West, & Interior	2.4	1.8	1.8	0.8
Southwest	--0.9	3.3	1.5	5.8
Copper River/Wrangell	3.0	2.3	5.1	1.7
Southeast	0.8	2.0	1.6	1.7
Rural	1.4	2.2	2.1	2.2
Urban Alaska				
Anchorage Municipality	10.2	4.3	3.3	6.8
Fairbanks North Star Borough	8.2	1.3	1.6	3.6
Mat-Su, Kenai Boroughs	5.6	5.0	6.4	11.8
Juneau, Ketchikan, Sitka Boroughs	3.0	1.8	2.7	3.3
Urban	7.8	3.3	3.3	6.6

*Excluding rural military installations.

Sources: U.S. Bureau of the Census decennial, census counts, and July 1984 population estimates.

and Sitka boroughs.

Since we want to test the idea that rural residents may be moving from smaller to larger settlements, we have defined three village size classes: 25-99, 100-499, and 500 or more. We would like to see whether the smallest places are more likely to lose population than the larger places. To track the fate of villages over a decade, we must hold the place/size classification of each village constant. If places were permitted to change their size classification as they grew, we might erroneously conclude that the population living in small places declined when in fact the population increased but was only partially included in the definition of the place/size class. We therefore classified places according to their size at the beginning of each decade.

It was also important to consider the treatment of places which "disappear" over the course of a decade and places which are identified for the first time at the end of a decade. We tried to verify actual village abandonments and believe that the disappearance of a village from one census to the next in our data file actually reflects the abandonment of the village, or at least a decline in population below twenty-five residents. We treated settlements which were first identified separately in a decennial census after 1950 in two ways. First, we ignored them and compared the aggregate population of a constant set of places. Places identified separately only at the beginning of a decade were assumed to have zero population at the end of the decade. This approach avoids the problems of possibly assuming that a new village was formed when in fact it might have existed previously but had been missed in the Census Bureau's list of places. It is thus the most direct test of the hypothesis that the residents of small villages are more likely to leave their community than the residents of larger settlements.

The second approach taken to compare population changes by village size includes the populations of apparently new communities (i.e., communities first identified in the decennial census serving as the end-of-decade point of comparison). All new places were categorized in the smallest size class, 25-99 population at the beginning of the decade, regardless of their size at the end of the decade. This approach serves to test the idea that small communities may come and go. If the rate of village abandonment is matched or exceeded by the rate of village formation, the number of small settlements and the size of the rural population living within them may stay constant or even grow.

Population Changes in the Fifties

In 1950, the population of rural Alaska was contained in 218 identified places. Almost half of these places, 102, had populations between 25 and 99. An equal number of places had between 100 and 499 residents. Only 14 places in rural Alaska had populations of 500 or more in 1950. All but 29 percent of the rural population lived in one of 204 villages of less than 500 inhabitants.

Not counting the population living in places first identified by the Census Bureau in 1960, the number of people living in Alaska's smallest rural places declined between 1950 and 1960 from 6,125 to 5,616 (see Table 3). No comparison with rates of natural increase is needed to conclude that settlements beginning the decade with populations between 25 and 99 generally lost population through out-migration during the fifties. Even when we include the new communities, the rate of population growth (0.5 percent per year, on average) is well below the probable (but unknown) rate of natural increase for the population.

Also clearly illustrating an out-migration trend from small settlements is the apparent disappearance of 36 of the 102 places separately identified in 1950 with populations of 25 to 99. These places included mining communities such as Ellamar, trading posts like New Hamilton, canneries such as Port Moller, and Native villages such as King Island.

In the villages with 1950 populations of 100 to 499, we detected a small absolute increase in population over the decade (the average annual rate of increase was 1.2 percent). While we do not know the precise rate of natural increase for this population, we can safely assume that it at least equalled the average statewide rate of natural increase for the fifties of 2.7 percent per year. Based on this assumption, rural communities with 1950 populations between 100 and 499 generally experienced a net loss in population due to migration over the course of the decade. Nine communities in this size class apparently declined in population below 25 residents or were abandoned.

Observed population changes for both communities of under 100 population and communities of 100-499 population document an overall trend of out-migration from small places in rural Alaska during the 1950s. Our next question is whether this trend applies to the fourteen larger rural Alaska settlements as well. Taking all communities with 1950 populations of 500 or more together, the answer appears to be yes. Their aggregate population increased from 13,754 in 1950 to 16,682 in 1960, for an overall average annual rate of increase of 1.9 percent. Again assuming that the rate of natural increase for Alaska as a whole represents a conservative estimate of the rate of natural increase for this population, net out-migration occurred over the course of the decade.

Unfortunately, we cannot tell whether the out-migrants from both large and small rural communities moved directly to urban Alaska or whether there was a two-step shift from small to large rural communities, and from large rural communities to urban areas. Both forms of migration doubtless occurred to some degree. The important point, however, is that a general trend of out-migration occurred in all three sizes of communities in the fifties, and the largest places grew more rapidly, on average, than the smallest places.

There were some important exceptions to the general trend of out-migration in rural Alaska's largest places during the fifties, however. Several places we now consider to be regional centers experienced net

Table 3

Rural Population Changes by Size of Community*

A. Number of Places

Size of Place at Beginning of Decade	1950s 1950	1950s 1960	1960s 1960	1960s 1970	1970s 1970	1970s 1980
25 to 99	102	66	65	56	70	65
100 to 499	102	93	117	115	123	123
500 or larger	14	14	16	16	16	16
New places	—	25	—	22	—	19
Total	218	198	198	209	209	223

B. Population

Size of Place at Beginning of Decade	1950s 1950	1950s 1960	1960s 1960	1960s 1970	1970s 1970	1970s 1980
25 to 99	6,125	5,616	3,789	4,432	4,300	5,327
100 to 499	18,621	21,016	23,796	26,623	27,819	35,645
500 or larger	13,754	16,682	18,104	22,753	24,862	32,250
New Places	—	2,375	—	3,173	—	1,482
Unallocated Pop.	9,329	9,128	9,128	11,122	11,122	9,210
Total	47,829	54,817	54,817	68,103	68,103	83,914

C. Average Annual Percent Change in Population

Size of Place at Beginning of Decade	1950-60	1960-70	1970-80
25 to 99	−0.9	1.6	2.2
100 to 499	1.2	1.1	2.5
500 or larger	1.9	2.3	2.6
25 to 99 incl. new places	2.7	7.2	4.7
Unallocated places	−0.2	2.0	−1.9
Statewide annual average percent natural increase	2.7	2.3	1.8

*Excluding rural military installations.

Source: U.S. Bureau of the Census.

in-migration. Kotzebue's population grew at an average annual rate of 7.6 percent. Other places apparently experiencing net in-migration were: Bethel (6.8 percent per year), Kodiak (4.4 percent per year), and possibly Barrow (3.3 percent per year).

Rural Population Trends in the Sixties

Although Alaska's smallest places did not experience absolute population declines in the sixties as they did in the fifties, they generally did not grow fast enough to match their probable rate of natural increase. Not counting new places, the population living in settlements with populations of 25 to 99 in 1960 grew at an average rate of 1.6 percent per year while the statewide rate of natural increase was 2.3 percent per year (see Table 3). Seven of the 65 villages identified in 1960 apparently declined below 25 population by 1970.

The addition of the population living in places identified for the first time in 1970 has had the apparent dramatic effect of raising the rate of population increase to 7.2 percent per year. Recall, however,

that during the sixties, rural Alaska as a whole apparently experienced a net out-migration of rural residents to urban areas of the state and a net in-migration of people from out-of-state to rural areas. Apparently, many of these non-Native in-migrants settled along Alaska's road system, expanding small settlements previously not identified as separate communities. Included in this group of places are Big Delta (an old telegraph station), Delta Junction (literally the junction between the Alaska and Richardson Highways), Paxson (a roadhouse), and Anderson (a subdivided homestead). Other destinations for non-Natives included lumber camps (e.g., Thorne Bay), and oil development sites (e.g., Prudhoe, Deadhorse).

Not all the "new" settlements were non-Native, however. Several old villages appeared to have increased in population above 25 and were thus separately enumerated (e.g., Igiugig, Lime Village [Hungry], Grayling, and Kongiganek). Other villages appeared to be new settlements (e.g., Nelson Lagoon and Twin Hills). Finally, some villages had been missed in previous censuses. The Kuskokwim village of Chuathbaluk, for example, had been called "Russian Mission" and unfortunately had been repeatedly missed, because it was confused with the nearby Yukon River village, Russian Mission. The problem with missed communities does not appear to have been substantial since the population living in unidentified places and remote areas increased at an average rate of 2 percent per year in the sixties, near the statewide rate of natural increase.

The observed increases in primarily non-Native settlements is consistent with the general migration flow of non-Natives to rural Alaska. The clear net out-migration of population from small places in general fits the overall pattern of rural out-migration to urban areas. At the same time, however, the re-emergence of several Native settlements and the appearance of a few new, primarily Native, settlements suggests that the notion of a gradual disappearance of small places is too simple. Even if we ignore the new non-Native places, the population living in Alaska's smallest places (including new Native places) increased at an average rate of 2.9 percent per year in the sixties. What the observed pattern does suggest is that the existence of these small places was not highly stable in the sixties; some villages disappeared while others took their places.

The fate of settlements in the 100-to-499 population range in 1960 was not as bright. The average annual increase in population for these places during the sixties was only 1.1 percent. Meanwhile, the population living in the state's largest rural places grew at 2.3 percent per year, on average, equalling the statewide rate of natural increase.

The growth of regional centers during the 60s had three likely sources: natural increase, in-migrants from smaller places, and non-Native in-migrants from outside rural Alaska. Unfortunately, the data needed to distinguish among these three sources is not available. It would also be interesting to know if some of the growth in small places resulted from an in-migration of non-Natives. We do not have population counts by race for places in 1960. We do know, however, that even when we exclude eighteen primarily non-Native places with populations of 25 to 99 persons in 1960, that 18 percent of the population in the remaining small places in 1970 was non-Native. To be sure, many places like Diomede, Anaktuvuk Pass, and Chevak were over 95 percent Native in 1970, but the significant presence of non-Natives in many of the state's smallest places suggests that they were the destinations for some on the non-Native in-migrants of the sixties.

Rural Population Changes in the Seventies

Our analysis of overall migration trends in rural Alaska for the seventies found that the out-migration of rural residents continued while the in-migration of non-Natives accelerated, for a net in-migration of some 3,700 over the decade. Turning now to the place data, we see that the apparent rates of increase in the population living in all community-size classes exceeded the statewide annual rate of natural increase of 1.8 percent (see Table 3). When new places (often resettlements near old village sites) such as Nuiqsut, Atkasook, Point Lay, and Atmautluak are included, the average annual rate of population increase for the smallest size class was 4.7 percent, well above the statewide rate of natural increase. It should be noted, however, that part of the apparent appearance of a significant population in new settlements resulted from greater efforts by the Census Bureau to identify settlements. Included in the list of "new" places, for example, are several settlements located along the Richardson Highway: Lower Tonsina, Slana, Tazlina, and Tonsina. The improvement of place definition accounts for the observed decline in the unallocated population over the decade of 1.9 percent per year.

At this point in our analysis, we can take advantage of birth, death, and race data by place not available for previous decades to take a closer look at migration trends in the seventies. We first matched state vital statistics summaries by place with our own place file containing census data. By adding births and substracting deaths from the 1970 population of each place and then comparing the resulting natural increase with the actual 1980 population, we can calculate net migration by place. Potential errors in both census and vital statistics data may lead to

erroneous conclusions for a few communities, but it is unlikely that the errors are large or systematic enough to jeopardize the validity of the analyses for groups of places.

Table 4 breaks down the observed increase in population within each place size class into births, deaths, and calculated net number of in-migrants. Ignoring newly identified places, we see that 356 of the total population increase in the smallest size classes (25 to 99) was due to net in-migration. In other words, 35 percent of the increase in the number of people living in the state's smallest communities was due to in-migration.

Comparisons for places with populations of 100 to 499 residents at the beginning of the seventies yield similar results. Almost a third of their aggregate population growth was due to in-migration. Finally, net in-migration accounted for 26 percent of the total increase in population in rural Alaska's largest places. In sum, we find no place/size class which experienced net out-migration during the seventies, even when we use place-specific vital statistics to calculate net migration.

It is interesting to note that the rate of natural increase was lower in the two smallest size classes of communities than in the largest size class of rural places, and lower than the rate of natural increase for urban Alaska. We commonly think of birth rates being higher among rural populations, and this result seems counter-intuitive. The reasons for the lower rates of natural increase are identified in Table 5. As commonly thought, women living in small, rural communities in 1970 had, on the average, more children than women living in larger places. The same held true in 1980. What caused the lower rates of natural increase, however, was first, a higher death rate, and second, a lower proportion of women in their child-bearing years.

The observed general in-migration trend in the seventies did not hold for all communities (see Table 6). Sixty-two percent of the 90 places with populations of 25 to 99 in 1970 or places which appeared for the first time in 1980 experienced net in-migration. The number of places in the next larger size class that experienced net out-migration and net in-migration were almost equal. In the largest size class of rural places, actually more communities experienced net out-migration than in-migration. These results suggest that the acceleration of in-migration to rural areas in the seventies was especially felt in the state's smallest places.

Table 4

Rural Net Migration by Size of Place in the 70s

A. Counts

Size of Place in 1970	Births	Deaths	Total Population Increase	Net No. of In-migrants
25 to 99	1,064	393	1,027	356
100 to 499	7,465	2,045	7,826	2,406
500 or larger	7,553	2,111	7,388	1,946
New places by 1980	252	64	1,482	811

B. Average Annual Rates of Increase

Size of Place in 1970	Rate of Natural Increase	Rate of In-migration	Rate of Total Pop. Increase
25 to 99	1.5	0.8	2.2
100 to 499	1.8	0.8	2.5
500 or larger	2.0	0.7	2.6

Table 5

Factors Affecting Natural Increase by Size of Place

Size of Place in 1970	Number of Children per Married Female, age 35 to 44		Females, Aged 18 to 34, as Percent of Total Population	
	1970	1980	1970	1980
Rural				
25 to 99	5.9	3.7	10%	14%
100 to 499	6.3	4.4	11	15
500 or larger	4.4	3.3	12	17
Urban	3.1	2.6	19	18

Size of Place in 1970	Annual Percent Decrease in Population due to Deaths 1970-1980	Annual Percent Natural Increase 1970-1980
Rural		
25 to 99	4.2%	1.5%
100 to 499	2.9	1.8
500 or larger	3.3	2.0
Urban	1.3	2.0

Table 6

Variations in Net Migration

Size of Place in 1970	No. of Places Experiencing Net Out-Migration[a]	No. of Places Experiencing Net In-Migration[b]	Percent of Places Net In-Migration
25 to 99	34	56	62%
100 to 499	61	63	51
500 or larger	10	6	38

Native vs. Non-Native In-migration to Rural Alaska

Our regional analysis clearly showed that both the sixties and the seventies were marked by an out-migration of rural residents and an in-migration of people from out of state. The rural-to-urban migration trend had the effect of redistributing the Native population. Whereas in 1960 only 16 percent of the Native population lived in urban Alaska, as we have defined it, 24 percent lived in urban Alaska in 1970 and 31 percent lived in urban Alaska in 1980. We have just seen that the populations living in all size classes of rural communities experienced net in-migration during the seventies. Putting these two facts together, we might expect that essentially all the in-migration to places in rural Alaska has involved non-Natives.

In fact, however, the smallest places in rural Alaska experienced a rate of Native population increase during the seventies that equaled the rate of Native population increase for the state as a whole (2.4 percent per year, not counting new places—see Table 7). This suggests that the net out-migration of rural Natives may have been generally from places with populations of 100 or more in 1970, and particularly from regional centers.

We can use population counts by age, race, and size of place to explore the differences in Native migration patterns further. We grouped Native and non-Native population counts for 1970 into five-year age intervals (commonly called age cohorts, see Table 8). We would expect to find that the number of Natives counted in any given age interval in 1970 (e.g., 10-14) minus the estimated deaths in the cohort over the decade should match the number of Natives counted in the age interval reflecting a ten-year increase in age in 1980 (e.g., 20-24), if no migration occurred. The apparent migration can be expressed as the percent increase or decrease in population in each age cohort from that expected based on 1970 population counts.

Before interpreting the results of Table 8, we should note two limitations in the analysis. First, the 1980 census summary tapes upon which the analysis is partly based do not include detailed age breakdowns by race for non-Native places of under 1,000 population. It only includes such data for villages of that size that were identified as Native under the terms of the Alaska Native Claims Settlement Act. While we would prefer to include all small places in our analysis, the group of places we can compare probably most closely correspond to most people's conception of rural Alaska. Second, the 1970 census age tabulations we used for the Native population include Asian and Pacific Islanders. This overstatement of the Native population is not significant in rural places.

Looking first at the percentage change in Native age cohorts in Native villages of 25-to-99 population in 1970, we observe that there are more Natives than we would expect with no migration in all but three of the four oldest age cohorts. Thus, there is evidence of an in-migration of a broad age range of Natives to small places. The in-migration was concentrated in the 15-19 and 30-34-year-old age cohorts. Note also

Table 7

Changes in Native and Non-Native Population by Size of Place

Size of Place in 1970	1970 Native Population	1980 Native Population	Annual Percent Increase	1970 Non-Native Population	1980 Non-Native Population	Annual Percent Increase	1970 Percent Native	1980 Percent Native
Rural								
25 to 99	2,579	3,273	2.4%	1,369	2,143	4.6%	66%	60%
100 to 499	22,366	26,716	1.8	4,861	8,741	6.0	83	75
500 or larger	10,854	12,121	1.1	14,008	20,129	3.7	44	38
Urban	12,410	19,631	4.7	210,797	290,528	3.3	6	6

Source: U.S. Bureau of the Census.

that the in-migration of non-Natives to the smallest places during the seventies was heavily concentrated in the 30-to-34-age cohort. Together, these facts suggest a possible relationship between the expansion of secondary education opportunities to small villages with both Native and non-Native in-migration. We will present more evidence on this point later.

A much different Native migration pattern is evident for the 100 to 499 size class of villages during the seventies. It appears that the young family and elderly subpopulations experienced net out-migration. The migration pattern of non-Natives in this size class is similar to that for the smallest places, but more evenly spread across the young adult age cohorts.

The out-migration of Natives is most evident in rural Alaska's largest places. While many of the Native individuals and families leaving rural Alaska's regional centers apparently moved to urban Alaska, some of these people may have instead moved to rural Alaska's smallest places, perhaps returning with their children to villages in which they grew up.

In sum then, our analysis of migration trends in the seventies by age and race suggests that more Native families with children at or near high school age moved into than out of the state's smallest communities. This net in-migration trend was accompanied by a larger increase in young, non-Native adults. The in-migration trend of Native families with teenagers in places of 25 to 99 population at the beginning of the decade is not apparent for larger rural communities. Rather, we see large percentage increases in the population of young, non-Native adults.

We can obviously not explain migration patterns in the state during the seventies as a general movement from smaller places to larger places. Rather, we see a reversed flow of Native families to Alaska's smallest places and counter flows of Natives and non-Natives in the two larger-size classes of communities. While urban Alaska continued to draw substantial numbers of Natives from rural Alaska, the major sources of rural out-migrants were the larger rural communities. Small rural places clearly became more attractive to Native residents in the seventies than they had been in the two previous decades.

Causes of Recent Migration Trends

Small places may have always held an attraction for Natives accustomed to basing much of their livelihood on the resources surrounding such communities. The addition of new or expanded public services (including high schools); amenities such as television, telephones, and housing; new employment opportunities; and increased disillusionment with urban life may have tipped the scales for significant numbers of Native families in favor of remaining in or returning to small villages.

While we have insufficient data to attempt a comprehensive explanation of shifting migration

Table 8

Estimated Net Migration Rates, 1970 to 1980, by Age, Race, and Size of Place
[Percent Increase or (Decrease)]

	Native				Non-Native				
Age in 1980	25 to 99	Rural 100 to 499	500 or Larger	Urban	Age in 1980	25 to 99	Rural 100 to 499	500 or larger	Urban
10-14	70%	10	(7)	41	10-14	(3)%	(22)	(8)	9
15-19	65	(04)	(13)	32	15-19	(29)	(16)	(2)	(5)
20-24	19	(18)	(23)	39	20-24	35	240	66	45
25-29	38	(18)	(11)	45	25-29	270	708	149	100
30-34	63	14	8	34	30-34	1,050	218	100	24
35-39	18	8	(3)	22	35-39	56	53	29	21
40-44	6	6	(13)	15	40-44	36	54	22	3
45-49	17	3	(10)	6	45-49	113	44	15	(7)
50-54	(12)	(11)	(6)	7	50-54	116	54	1	(4)
55-59	27	3	(17)	23	55-59	(17)	35	(10)	(15)
60-64	(13)	2	(10)	20	60-64	(25)	6	(26)	(23)
65-69	(03)	8	(2)	18	65-69	(33)	(32)	(23)	(26)

Sources: U.S. Bureau of the Census and Alaska Vital Statistics.

Table 9

Changes in Rural Housing, by Size of Place: 1970-1980

Size of Place in 1970	Percent Living in House Built in Last 5 Years		Percent Living in House Worth at Least	
	1970	1980	$15,000 in 1970	$50,000 in 1980
25-99	6%	29%	4%	25%
100-499	20	29	5	28
500 or larger	22	32	43	59

trends, we can present some limited information that at least suggests some of the major reasons for the increased attractiveness of small places to Alaska Natives. In 1970, only 3 out of every 50 houses located in places with 25 to 99 residents had been constructed in the last 5 years (see Table 9). By 1980, more than one in four houses were less than 6 years old. Only 4 percent of all rural households lived in housing valued at $15,000 or more in 1970, while 25 percent lived in housing valued at $50,000 or more in 1980.

Most striking, however, is the relationship between the existence of a village high school and in-migration. We calculated the average net in-migration for small communities, grouping them according to whether they had an operational high school program by 1980, whether a high school was under construction by 1980, or whether the community had declined to participate in the village high school program. The results are displayed in Table 10.

Virtually all communities in the 100-to-499 range and even most of those in the 25-to-99 range were listed in a consent decree signed to by state to provide high school programs in rural Alaska. The average small village in which a high school was under construction by 1980 added 9 people to its population from in-migration. If a village already had an operational high school program by 1980, however, the average net in-migration jumped to 27. The relationship between high schools and migration is also evident in the next larger size class of communities. The presence of a high school in 1980 was associated with an average net *in*-migration of 40, while villages in which a high school was only planned or under construction by 1980 had an average net *out*-migration of 5. While more data and analyses are required to establish the relative importance of the myriad of possible causes for increasing numbers of Native families choosing to live in Alaska's smallest places, the village high school program must have played an important role.

Future Migration Patterns

In 1976, in a report to the Federal-State Land Use Planning Commission for Alaska, entitled "The Evolving Pattern of Village Alaska," William Alonso and Edgar Rust analyzed population trends in northern and western Alaska. They concluded:

> The process of village consolidation can be expected to continue, for much the same reasons that propelled it historically. Government policy in almost every field now underwrites this trend by withholding services from the smallest places. In short, we expect a general redistribution of population from the smallest villages—under 100, for example—to ones now in the 300 to 500 range, and to the regional centers In the smallest size class, many villages can be expected to be abandoned in the next decades.

Our analysis of rural population trends in the fifties and, to a lesser extent, the sixties would lead to a similar conclusion if these trends were assumed to continue. We found that rural Alaska's smallest places indeed experienced net out-migration. In the fifties, 36 of the 102 places beginning the decade with populations of 25 to 99 either were abandoned or fell

Table 10

Average Net Migration by High School Status, by Size of Place

Size of Place in 1970	Average Net Migration			
	High School in Operation by 1980	High School under Construction or Planned by 1980	Village Declined High School	All Communities
25-99	27	9	1	14
100-499	40	−5	−59	14
No. of Communities:	67	64	12	143

below 25 population. In the sixties, 7 of the 65 places in the smallest size class met the same fate. While we found that even the population living in the largest rural places also experienced net out-migration in the fifties, key regional centers like Kotzebue and Bethel experienced net in-migration. In the sixties, the largest size class of communities tended to grow at or above the probable rate of natural increase.

We also observed a continuing redistribution of the rural Native population to urban Alaska. While only 16 percent of the Native population lived in urban Alaska (as we defined it) in 1960, 31 percent lived in urban Alaska in 1980. We estimated that the net flows of rural, primarily Native, residents to urban Alaska was between 7,000 and 11,000 in the fifties, 3,500 in the sixties, and 4,300 in the seventies.

Taken alone, these results lend support to Alonso and Rust's prediction that village consolidation and a general movement to urban Alaska will continue. However, Alonso and Rust could not have foreseen the magnitude of state spending in rural Alaska in the last ten years. Contrary to Alonso and Rust's expectations, small rural communities did receive expanded services. They may have also underestimated the effects of the Alaska Native Claims Settlement Act, and the underlying desire of many Native families to live in small communities. Armed with more recent census data, we found that rural Alaska's smallest places tended to experience a net *in*-migration of Native families in the seventies.

We also observed a substantial flow of non-Natives into rural Alaska during the sixties and seventies. We estimated this flow at 3,300 in the sixties and 8,000 in the seventies. The combined flow of Natives and non-Natives resulted in 62 percent of all small places in rural Alaska experiencing net in-migration and 81 percent of all small rural places experiencing an absolute increase in population over the decade. During the 70s, at least, the predicted pattern of village consolidation did not materialize. In fact, the number of small places increased from 70 in 1970 to 94 in 1980.

If the trends in the seventies were to continue, we would expect a persistent net flow of Natives from larger rural places to urban Alaska and, to a lesser extent, to smaller rural places. Thus, small villages might continue to maintain or even increase their populations at the same time that urban Alaska expands its share of the Alaska Native population. Increasingly, the population of rural Alaska as a whole would become a mixture of Native and non-Native residents.

Faced with declining oil revenues and federal budget cuts, however, we cannot assume that the forces behind migration patterns in the seventies will continue. The question is, will the trend of village consolidation so evident in the fifties reassert itself? In large part, we think that the answer will depend on the state's allocation of its reduced revenues. If small communities are increasingly faced with the necessity of paying for the operation and maintenance of local services, the quality of services may seriously decline and lead to renewed out-migration. Even if existing services are maintained in Alaska's smallest communities, however, residents are still likely to face declines in job opportunities as the pace of construction activity slows. They may decide that their economic circumstances are nevertheless better where they are than they would be in urban centers where job competition is greatest and where subsistence activities are more difficult. On the other hand, expanded personal income demands associated with new housing and changing expectations may cause many to seek temporary employment outside their village or to move their families to urban Alaska.

An alternative solution would be to develop local employment opportunities with private industry. No doubt this will prove possible in some rural areas of the state. In the long run, however, it may well be necessary for the state and its residents to consider the costs and benefits of small-community living and to construct components of an overall state policy toward rural settlement.

At one extreme, it makes little sense to slow a historical rural-to-urban migration if such a policy increases the public cost of providing services. At the other extreme, withdrawing public services only recently put in place could severely wrench the lives of residents who made living choices partly on the basis of these services. In between, one can imagine a more satisfactory policy which continues to provide some level of basic services but which encourages those who want the equivalent of urban services in rural communities to lower their expectations or move to urban Alaska.

APPENDIX

ISER Village Data File

Name	1950 Population	1960 Population	1970 Population	1980 Population	70-80 Net Migration	1970 Native Population	1980 Native Population
Akhiok	72	84	115	105	−31	113	101
Akiachak	179	229	312	438	51	300	398
Akiak	168	187	171	198	−2	169	191
Akolmiut	236	571	526	641	115	505	620
Akulurak	197						
Akutan	86	107	101	169	66	90	67
Alakanuk	140	278	265	522	150	247	491
Aleknagik	153	181	128	154	4	97	138
Allakaket (Alatna)	79	115	174	163	−39	168	158
Ambler		70	169	192	−21	159	155
Anaktuvuk Pass	66	35	99	203	75	97	191
Anderson			362	517	102	6	16
Angoon	429	395	400	465	0	377	412
Aniak	142	308	205	341	85	170	218
Annette	302	337	195	139	−115	19	54
Anvik	99	120	83	114	14	75	91
Arctic Village	53	110	85	111	4	82	98
Atka	85	119	88	93	−1	86	90
Atkasook				107		0	99
Atmautluak				219		0	206
Barrow	951	1314	2104	2267	−213	1905	1720
Beaver	101	101	101	66	−41	86	65
Belkofski	119	57	59				
Bessie No. 5	54						
Bethel	651	1258	2416	3576	451	1853	2417
Big Delta	155		250	285	23	0	6
Birch Creek		40		32		0	31
Boswell Bay		32					
Brevig Mission	109	77	123	138	−8	118	138
Buckland (Elephant Pt.)	108	87	104	177	42	103	161
Candle	105	103					
Chaneliak	100						
Cantwell	67	85	62	89	20	40	28
Cape Pole		92	123	29	−102	15	0
Central	41	28	26	36	1	0	1
Chalkyitsik		57	130	100	−48	123	96
Cheeching	54						
Chefornak	106	133	146	230	33	141	221
Chenega	91						
Cheneliak		93					
Chevak	230	315	387	466	−5	376	445
Chicken	34			37		0	1
Chiftak	50						
Chignik	253	99	83	178	83	67	95
Chignik Lagoon		108	45	48	−14	0	41
Chignik Lake		107	117	138	6	115	123
Chistochina	31	28	33	55	19	17	27
Chitina	92	31	38	42	−1	6	20
Chowhoctolik	98						
Chuathbaluk			94	105	2	90	93
Chuktaktoolik	59						
Circle	83	41	54	81	13	32	60
Clark's Point	128	138	95	79	−25	66	70
Coffman Cove				193		0	0
Cold Bay		86	256	228	−49	26	10
Copper Center	90	151	206	213	−81	92	85

ISER Village Data File

Name	1950 Population	1960 Population	1970 Population	1980 Population	70-80 Net Migration	1970 Native Population	1980 Native Population
Cordova	1165	1128	1164	1879	510	162	286
Council	41						
Craig	374	273	272	527	211	153	170
Crooken Creek	43	92	59	108	45	55	91
Deadhorse			163	64	−99	0	9
Deering	174	95	85	150	48	83	138
Delta Junction			703	945	−79	7	27
Dillingham	577	424	914	1563	482	582	891
Diomede	103	88	84	139	46	82	136
Dot Lake		56	42	67	12	29	38
Dunbar				50		0	8
Eagle	55	92	90	110	3	4	7
Eek	141	200	186	228	19	167	220
Egegik	119	150	148	75	−72	74	57
Ekuk		40	51				
Ekwok	131	106	103	77	−40	94	71
Ellamar	46						
Elfin Cove	65		49	28	−14	2	2
Elim	154	145	174	211	−3	168	203
Emmonak	67	358	439	567	16	421	517
Evansville	47	77	57	94	24	14	27
Eyak				47		0	1
False Pass	42	41	62	70	10	58	60
Flat	95	27					
Fort Yukon	446	701	448	619	68	376	442
Fortuna Ledge (Marshall)	95	166	175	262	28	169	246
Gakona	50	33	88	87	−48	23	14
Galena	176	261	302	515	148	265	350
Gambell	309	358	372	445	18	356	425
Glennallen	142	169	363	511	25	37	39
Golovin	94	59	117	87	−37	111	85
Goodnews Bay (Mumtrak)	100	154	218	168	−58	210	161
Grayling			139	209	41	0	129
Gulkana	65	32	53	104	47	52	43
Gustavus	82	107	64	98	22	4	2
Haines	338	392	1504	1680	−2	230	214
Healy	102	67	79	334	211	10	16
Healy Lake	102			33		0	29
Holikachuk	98	122					
Holy Cross	157	256	199	241	4	192	221
Hoonah	563	686	748	680	−189	534	543
Hooper Bay	307	460	490	627	8	477	598
Hughes	49	69	85	73	−20	73	71
Huslia	65	168	159	188	−11	151	178
Hydaburg	353	251	214	298	51	189	253
Hyder	30	32	49	77	29	0	1
Igiugig			36	33	−5	34	25
Igloo	64						
Ikatan	29						
Iliamna	44	47	58	94	13	23	38
Ivanof Bay			48	40	−15	46	37
Kaguyak		36	59				
Kake	376	455	448	555	27	401	467
Kakhonak	39	57					
Kaktovik		120	123	165	31	107	148
Kaltag	121	165	206	247	6	193	236
Karluk	144	129	98	96	−21	95	96
Kasaan	47	36	30	25	−4	8	14

ISER Village Data File

Name	1950 Population	1960 Population	1970 Population	1980 Population	70-80 Net Migration	1970 Native Population	1980 Native Population
Kiana	181	253	278	345	−4	268	325
King Cove	162	290	342	460	53	305	367
King Island		49					
King Salmon		227	202	545	301	12	32
Kipnuk	185	221	325	371	−30	320	358
Kivalina	117	142	188	241	12	183	237
Kokrines	68						
Klawock	404	251	213	318	84	195	210
Klukwan	91	112	103	135	21	92	113
Kobuk	38	54	165	62	−120	160	59
Kodiak	1710	2628	3798	4756	−296	563	666
Kokhanok	39	57	88	83	−20	0	80
Koliganek	90	100	142	117	−43	134	112
Kongiganak			190	239	8	183	231
Kotlik	44	57	228	293	20	224	280
Kotzebue	623	1290	1696	2054	−92	1337	1574
Koyuk	134	129	122	188	39	121	180
Koyukuk	79	128	124	98	−41	121	91
Kupreanof			36	47	11	2	2
Kwethluk	242	325	408	454	−26	390	441
Kwigillingok	245	344	148	354	173	145	343
Larsen Bay	53	72	109	168	41	91	120
Levelock	76	88	74	79	−12	60	69
Lime Village (Hungry)	29		25	48	18	25	39
Lower Kalskag	88	122	183	246	26	177	237
Lower Tonsina				40		0	21
Manley Hot Springs	29	72	34	61	17	11	12
Manokotak	120	149	214	294	40	205	273
McGrath	175	241	279	355	26	110	165
McKinley Park	59	28	28	32	−13	0	1
Medfra	25						
Mekoryuk	156	242	249	160	−117	234	153
Mentasta Lake		40	68	59	−23	64	55
Metlakatla	817	798	1050	1056	−185	847	904
Meyers Chuck	51		37	50	14	2	0
Minto	152	161	168	153	−42	159	141
Mountain Village	221	300	419	583	29	394	539
Naknek	174	249	178	318	92	38	161
Nanvarnarluk	116						
Napainmuit	44						
Napakiak	139	190	259	262	−37	255	254
Napaskiak	121	154	259	244	−62	255	239
Nelson Lagoon			43	59	15	39	55
Nenana	242	286	362	470	57	142	214
New Hamilton	27						
New Knock Hock	122						
New Stuyahok	88	145	216	331	53	208	311
Newtok (Chiftak)	69	129	114	131	−12	111	124
Newhalen	48	63	88	87	−13	83	82
Nightmute	27	237	127	119	−33	122	116
Nilikluguk	40						
Nikolai	88	85	112	91	−36	101	82
Nikolski	64	92	57	50	−11	52	48
Noatak	326	275	293	273	−49	286	259
Nome	1876	2316	2488	2301	−576	1517	1347
Nondalton	103	205	184	173	−48	182	161
Noorvik	248	384	462	492	−48	443	467
North Whale Pass				90		0	0

ISER Village Data File

Name	1950 Population	1960 Population	1970 Population	1980 Population	70-80 Net Migration	1970 Native Population	1980 Native Population
Northway		196	152	73	−119	10	10
Nuiqsut				208		0	181
Nulato	176	283	308	350	7	297	329
Nunachuk	44						
Nyak	64						
Ohagamiut	27						
Old Harbor	121	193	290	340	−7	269	315
Ophir	68						
Oscarville	27	51	41	56	5	38	56
Ouzinkie	177	214	160	173	−14	143	163
Paingakmeut	44						
Pauloff Village	68	77	39				
Paxson			24	30	0	0	1
Pedro Bay	44	53	65	33	−43	51	31
Pelican	180	135	133	180	25	27	33
Perkinsville				33		0	13
Perryville		111	94	111	−6	90	103
Petersburg	1619	1502	2042	2821	473	242	312
Pile Bay	48						
Pilot Point	67	61	68	66	−7	58	57
Pilot Station	52	219	290	325	−46	287	306
Pitkas Point	84	28	70	88	0	67	82
Platinum	72	43	55	55	−5	48	44
Point Baker	81		19	90	73	0	5
Point Hope	264	324	386	464	6	369	434
Point Lay	75			68		0	63
Port Alexander	22	18	36	86	41	0	5
Port Clarence				29		0	0
Port Heiden		74	66	92	20	58	59
Port Lions (Afognak)	158	190	227	215	−36	177	158
Port Moller	33						
Portage Creek				48		0	44
Prudhoe Bay			49	50	1	0	2
Quinhagak	194	228	340	412	−13	332	402
Rampart	94	49	36	50	13	21	47
Red Devil		152	81	39	−50	14	18
Ruby	132	179	145	197	29	134	171
Russian Mission	55	102	146	169	−34	138	159
Sand Point	107	254	360	625	185	260	357
Savoonga	249	299	364	491	58	354	463
Scammon Bay	103	115	166	250	36	166	241
Selawik	273	348	429	535	3	418	352
Shageluk	100	155	167	131	−50	158	120
Shaktoolik	127	187	151	164	−21	144	159
Sheldon Point	43	125	125	103	−41	121	98
Shishmaref	194	217	267	394	53	249	369
Shungnak	141	135	165	202	0	54	179
Skagway	758	659	675	768	−19	40	35
Slana				49		0	8
Sleetmute	120	122	109	107	−15	95	95
Soloman	93						
South Naknek		142	154	145	−19	85	124
Squaw Harbor	45			65			
St. George	187	264	163	158	−25	155	153
St. Mary's		225	384	382	−72	350	336
St. Michael	157	205	207	239	−41	192	227
St. Paul	359	378	450	551	26	428	483
Stebbins	115	158	231	331	2	223	316

ISER Village Data File

Name	1950 Population	1960 Population	1970 Population	1980 Population	70-80 Net Migration	1970 Native Population	1980 Native Population
Stevens Village	84	102	74	96	14	72	61
Stony River			74	62	−22	61	56
Suntrana	130	81	67	56	−11	11	6
Takotna	42	40	40	48	4	0	25
Takshak	39						
Tanacross	137	102	84	117	19	77	101
Tanana	228	349	120	388	190	7	307
Tatitlek	89	96	111	68	−51	107	53
Tazlina				31		0	4
Telida				33		0	32
Teller	160	217	220	212	−30	192	196
Tenakee Springs	140	109	86	138	71	6	7
Tetlin	73	122	114	107	−23	108	104
Thorne Bay			443	320	−166	7	9
Tikikluk	49						
Togiak	108	220	383	470	12	377	443
Tok	104	129	214	589	293	26	90
Toksook Bay			257	333	5	251	312
Tonsina				135		0	26
Tuklung	30						
Tuluksak	116	137	195	236	−2	190	228
Tuntutuliak	68	144	158	216	16	154	209
Tununak	112	183	274	298	−23	270	283
Twin Hills			67	70	−4	66	67
Ugashik	48	36					
Umkamute	99						
Unalakleet	469	574	434	623	125	403	546
Unalaska	173	218	178	1322	1119	113	200
Unga	107	43					
Upper Kalskag (Kalskag)	139	147	122	129	−8	106	108
Usibelli Mine	28	30	65	53	−39	0	2
Valdez	554	555	1005	3079	1744	150	175
Venetie	81	107	112	132	−7	108	129
Wainwright	227	253	315	405	31	307	372
Wales	141	128	131	133	−11	121	122
White Mountain	129	151	87	125	23	84	116
Whittier	627	809	130	198	47	5	17
Wrangell	1263	1315	2029	2184	−178	380	390
Yakutat	298	230	190	449	183	156	279

INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH

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INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH
University of Alaska, Anchorage
Thomas A. Morehouse, Acting Director
707 "A" Street, Suite 206
Anchorage, Alaska 99501

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